





## SPECIFICATIONS OF RECENT PATENTS.

## NEW COMPOSITION FOR THE PREVENTION OF CORROSION IN METALS.

Specification of the patent granted to Arthur Wall, of 71, Wapping Lane, Shadwell, for a new composition for the prevention of corrosion in metals, and for other purposes.

Arthur Wall declares the nature of his invention, and the manner in which the same is to be performed, as follows:—I place 20 lbs. of the strongest muriatic acid, diluted with about three gallons of water, in a shallow pan or vessel made of cast-iron, I then take 112 lbs. of filings of either steel or bar-iron, or other wrought-iron; I heat them to redness, and throw them into the mixture of acid and water for the purpose of oxidizing the filings; I then place the pan on a sand-bath (heated by a fire from a furnace), which digests the filings and facilitates the oxidation. I repeatedly stir up the whole, and after subjecting them to this process for about twenty-four hours, or until effluvia takes place, and the greater part of the filings is taken up by the liquor or mixture, I allow the oxide thus obtained to run off through a tap into a vessel beneath, leaving the metal not operated upon at the bottom. When these oxides are quite settled, the clear mixture or liquor is run off from them into a third vessel, and then the filings must be subjected to the same process in the original mixture to complete the oxidation; that is, they must be again made red-hot, and the mixture which has run into the third vessel thrown upon them, and this process must be repeated until all the filings have oxidized that can be made to do so. The oxides thus obtained I now export 20 lb. iron plate made red-hot over a furnace, until all moisture has evaporated from them, and they assume a red appearance. I then mix with them 16 lbs. of quicksilver, by sifting it through a very fine wire sieve on to the oxides; and afterwards I intimately mix it with them, by rubbing the whole down in a mortar or other suitable process; and when so mixed, I then add as much water as will cover the surface, and from 8 lbs. to 9 lbs. of strong nitric or nitrous acid, and again place the whole on the furnace-plate or sand-bath, and repeatedly stir it until all the moisture or liquor has nearly, or completely, evaporated. I then place the whole mass in a mortar, or other pounding machine, and bray or pound it until it is in a complete state of blackness. I then mix it with water, and stir or work it until all the light particles are washed. I then allow it to settle, and when the settlement has taken place, the water is poured off from the sediment at the bottom. This sediment I then place in a crock or earthen retort, with a receiver attached, adapted for the reception of any chloride or mercury that may escape or come over (the contents of the receiver I preserve, in order to re-add to the general mass afterwards when cool); then I make it red-hot, and when in this state I plunge it into fresh boiling-water and stir it for a few minutes and then allow it to settle. I then pour the water off, let it cool, and add the chloride, as before stated, and after the last-mentioned process, I add to it one-fourth its own weight of common black lead or minium, commonly called red lead, according to the colour which the operator wishes the composition to assume. Previously to applying this composition to metals, I add to it such a quantity of a mixture of boiled linseed oil and spirit of turpentine (in the proportion of one-fifth of spirit of turpentine to the oil used) as will reduce it to a state sufficiently liquid to be spread with a brush. This preparation I then apply as thinly as possible, by means of a brush, to sheets of copper or other metal, which sheets I afterwards subject to a heat gradually raised to about 200 deg. of Fahrenheit's thermometer, so as to make the metal imbibe the preparation. This heat must be applied to the sheets of prepared metal without smoke or flame, by placing the sheets on trucks in contact with the fire-plates.

## IMPROVEMENTS IN COATING IRON PIPES AND TUBES.

Specification of the patent granted to Richard Farger Emerson, of Manchester, Lancashire, for improvements in applying a coating to the surface of iron pipes and tubes.

Richard Farger Emerson, declares that the nature of his invention, and the manner in which the same is to be performed, as follows:—My invention relates to coating the surfaces of wrought-iron welded tubes, and cast-iron tubes, with tin or alloy of tin. And in order to give the best information in my power, I will proceed to explain the means pursued by me in carrying out my invention. I first cleanse the surfaces to be coated, by removing any scale, and if the ends of the tubes have been operated on by a screw-tap, and all has been used in such process, before removing the scale by pickling. I heat the ends or other parts of the tubes touched with oil, till the surfaces are freed from oil, I then immerse the tubes in suitable pickling liquor; I use liquor composed of two parts muriatic acid to three parts of clear water, and allow the tubes to remain in pickle till the scale comes off easily by scouring with sand. The scale being removed and the interior and exterior surfaces being clean and free from scale, and then washed in clean water, such surfaces will appear of a light grey colour, when they are in a condition to undergo the next process, which consists of immersing the cleaned tubes in a bath composed of muriatic acid and zinc or spelter, in the proportions of about three ounces of zinc or spelter to each pint of muriatic acid, the zinc or spelter being dissolved by the acid. The tubes are to be immersed and passed into this liquor, as to cause them to be acted on inside and out by the liquor, the tubes in this process only remaining in the liquor so long as to insure such action, and I usually pass one end of the tube under the liquor, and move the tube forward into the trough or vessel containing the liquor, so that a stream will pass through the tube passing out at the other end of the trough or vessel, to that at which it was first introduced. The tube is next to have a quantity of powdered rosin placed within and dusted over the external surface, so as to cover both surfaces as completely as possible. The tube is then to be passed into a vessel containing tin, or alloy of tin, in a melted state, as is well understood when making tin plates, and I conduct the tube end forward through the melted metal, so as to obtain a current of the metal through the tube, by which means the tubes so treated will become coated; the surfaces of the tubes being wiped with tow on being removed from the melted tin or alloy. And if I find on examination that any of the parts are defective, I again submit them to the bath of acid and zinc or spelter, and again use the rosin, and then submit the tube to the melted metal. I would remark, that in like manner the short tubes or fittings for such welded iron and cast-iron tubes may be treated, in order to coat their surfaces; and it will be evident, that if only the interior surfaces are to be coated, then the scale is only to be removed from the interior by filing it with suitable pickling liquid.

Having thus described the nature of my invention, and the manner of performing the same, I would have it understood, that I do not claim any of the processes herein described, when employed for other purposes than that of preparing for and coating welded and cast iron tubes with tin or alloy of tin; and I do not confine myself to the precise means herein described, so long as my invention is retained. But what I claim, is the coating of the surfaces of welded iron and cast-iron tubes, with tin or alloy of tin, as herein described.

[From the *Illustrated Advocate*.]

Thomas William Hooker, Ironmaster, Mellor Griffith's Works, near Cardiff, for improvements in the manufacture of iron, Aug. 23.—This invention consists of a method of simplifying and accelerating the conversion of cast-iron from its crude state into malleable or wrought iron.

An open refinery or furnace such as is generally used is constructed, and is connected with a reverberatory or puddling furnace by a passage, terminating in an aperture in the neck of the same. Through this passage the iron which has become refined in the refinery is run in a fluid state, direct from the refinery hearth into the puddling furnace, on each side of which is a door, through which the workmen perform the process of puddling in the ordinary way. The method of charging and working the iron is as follows:—The fuel being thrown up in the refinery, and the necessary heat produced, a charge of pig or cast-iron of the description generally used for large purposes is thrown in. This is melted down and refined in the ordinary way, and when the refining process is complete, the whole charge of metal is run off in a fluid state into the puddling furnace, previously prepared to receive it, by having been heated to a proper degree of temperature, and by the workmen having protected the bottom, sides, bridges, and opening to the flue, by throwing in a sufficient quantity of limestone and iron clinkers as usual. The metal being introduced into the puddling furnace, the heat is varied in the ordinary way as circumstances may require, and the iron is stirred up with bars and puddles, while the escape of the oxide of carbon in a gaseous shape takes place, and until the whole mass of iron agglomerates. It is then divided into lumps or balls of a convenient size, and the charge is drawn from the furnace, the lumps being passed to the rolling cylinders or such other contrivances as may be used for forging or compressing the iron.

In carrying out these improvements, an alteration need be made in the construction of the refinery and puddling furnace, the main feature of the invention being the casting of the heated metal of the refinery process to pass into a puddling furnace without being first permitted to cool.

COMPARATIVE RAILROAD FARES IN ENGLAND, FRANCE, GERMANY, AND BELGIUM.—On the great railways in England, the price in the first-class carriage, per league of 3,600 metres (above three English miles), amounts to 1s. In France it averages about 30c.; in Germany, a trifle less; and in Belgium about 35c. The new railroad tariff came into operation on the 1st instant. The placing in the waggon are now charged, on an average, 25c. from station to station, instead of 15c.; those of the class-bones are slightly raised; and those of the diligences are reduced about one-tenth. There has been a great increase in the number of travellers during the time of the low prices, but a falling off in the receipts. As the present prices are still remarkably moderate, being lower than those of any other railway, it is hoped that the increased amount of travelling will be maintained. The price from Brussels to Ostend (between eighty and ninety English miles) is 41c.—*Revue*.

## LAW INTELLIGENCE.

## QUESTION OF PARTNERSHIP—IMPORTANT CASE.

NORTHERN CIRCUI, LIVERPOOL.—AUG. 25.

MARTINEAU v. COLE AND ADDISON.—This was an action to recover a sum of £171. 19s., being the value of a number of shares in the North Midland Railway, sold for the plaintiff. The cause was of an exceedingly interesting character to bankers, stock, and share brokers, and others engaged in business. It appeared that in the year 1836, a gentleman of the name of Boulton, of Liverpool, began business as a share broker. The same year he was introduced, by a Mr. Hutton, to Messrs. Cole and Mullins, the stock and share brokers, of London, on whose recommendation Messrs. Cole and Mullins agreed to act as agents for Mr. Boulton; the arrangement being the usual one of the trade; that they would only charge Mr. Boulton half commission. In August, 1834, Boulton went into partnership with a person of the name of Addison, which was communicated to Cole and Mullins, and they made no objection. Matters went on accordingly to the present year, Cole and Mullins doing business as agents for Boulton and Addison, and considerable transactions having taken place between them. In the spring of 1841, however, Mr. Martineau, a gentleman residing in Liverpool, having more shares in the North Midland Railway than he wished, employed Boulton and Addison to dispose of eleven whole shares and as many half shares for him. The shares were disposed of through Cole and Mullins, to meet contracts previously made for Boulton and Addison, but Boulton and Addison became bankrupt, and Mr. Martineau having been unsuccessful in his endeavours to recover the price from them, brought his action against Cole and Mullins for the whole amount, being £601. The plea on which it was maintained for Mr. Martineau that Cole and Mullins were liable, is, that an agreement to divide commissions made the parties so agreeing partners, on the principle that the commission made the profit, and the profit was the fund which was the subject-matter of the business; and as the parties divided the fund, so they ought to divide the risk. It was not contended that there was a general partnership, but a limited copartnership. The defendants argued very properly that a mere agreement to do what the usages of the trade required, to charge half commission for orders obtained, could not constitute a copartnership; if it did, every banking-house in the kingdom would be in partnership with their brokers, who did their business for half commission. It was finally agreed, after a lengthened argument, that a special case should be taken to decide the question whether there was a limited partnership, or whether that was barred by the custom of the trade, and of brokers in general. Pending the consideration of the point reserved, we shall abstain from offering any opinion, considering it sufficient in the mean time to have given this brief detail of the facts. We hear that Messrs. Cole and Mullins proved on the estate of Boulton and Addison for upwards of £5000, after giving credit for every transaction that passed between them. It would be hard indeed if they were made liable besides the £601. claimed by Mr. Martineau, simply because, as agents, they agreed to do business on the usual terms of half commission for Boulton and Addison, who were their principals.

## NON-PAYMENT OF CALLS—LIABILITY OF EXECUTORS.

LIVERPOOL ADVICE.—AUG. 26.

SHEFFIELD AND MANCHESTER RAILWAY COMPANY v. TOWNSEND AND OTHERS, EXECUTORS.—This was an action brought by the directors of the above company against the three defendants, as executors of John Townsend, deceased, to recover the sum of £3001, with interest, being the amount of three calls on twelve shares in the railway held by the deceased. Two of the defendants suffered judgment to go by default, the third pleaded full administration of the effects of the deceased, and that no funds remained to pay the demand. It was proved, however, by the cashier of the Sheffield and Hallamshire Bank, with which the deceased did business, that, at the time of his death, there was a balance of £1000l. in his favour. Evidence was tendered of other property belonging to him, but this was deemed sufficient, and the jury, under the direction of the learned judge, found for the plaintiffs—damages, £311. 15s. 6d.

## JOHBBING IN SHARES.

LIVERPOOL ADVICE.—AUG. 28.

CORRE v. STEWART.—The declaration stated, that, by a certain memorandum in writing, addressed to the plaintiff (Mr. Cobb), signed by the defendant (Mr. Stewart), and sent to the plaintiff, the plaintiff made an engagement to deliver to the defendant, on or before the 10th October, twenty-five shares in the London and Birmingham Railway, at 99l. per share, and that, if the defendant failed to pay for them at the time agreed upon, the plaintiff should be at liberty to resell them, and charge the defendant with the difference between the prices on the day of delivery and the day of sale.

Mr. Crosswell and Mr. Crompton conducted the plaintiff's case; Mr. Martin that of the defendant.

Mr. CROSSWELL said, this was an action in which the plaintiff, Mr. T. R. Cobb, sought to recover from the defendant the sum of about 900l., the difference in the value of twenty-five shares in the London and Birmingham Railway, on the 10th and 19th of October last year. On the 17th of June, 1840, a contract was made between the plaintiff and the defendant, Mr. Stewart, in the presence of Mr. De Costa, to deliver and receive the shares named in the declaration on or before the 10th of October. The learned counsel here read the contract. The defendant was not ready to pay for them on the 10th, and he so informed the plaintiff, asking them to hold them over till the 14th. This was agreed to, and the defendant not paying for them on that day, they were sold on the 19th. The action was to recover 902l., the difference in the value of the shares on the 10th and the 19th.

Evidence of the contract, of the transactions of the 14th, of the sale on the 19th, and the loss was then put in, and Mr. MARTIN, for the defendant, having replied, the JUDGE, in summing up, told the jury, that the only question for them to consider was, whether the loss should be calculated as if the shares had been sold upon the 14th, or as from the actual sale on the 19th.—The Jury, after a few minutes' conversation, returned a verdict for the plaintiff, and that the loss should be fixed from the sale upon the 19th—damages, 902l., the difference between the verdict and the sum claimed being caused by money received in dividends.

## CONTRACT FOR LOCOMOTIVES ON THE GREAT WESTERN RAILWAY.

LIVERPOOL ADVICE.—AUG. 30.

SHARP AND ANOTHER v. THE COMPANY.—This was an action for a balance alleged to be due for engines supplied. The engines, according to the specification, were to be made of the best materials, and were to be tested by a journey of 1000 miles with a sufficient load, during which time the plaintiffs were to be liable for breakage, &c., from defective materials; and if the 1000 miles should not be run within a month, the liability of the plaintiffs to cease at the end of that time. It was contended that the plaintiffs were not entitled to the balance claimed, inasmuch as the engines had not been made in all respects of the best materials, but that the copper of the fire-boxes was of inferior quality, and in consequence had worn away with great rapidity.

His LORDSHIP held that evidence inadmissible in the present issue, and that the defendants could have compensation for any such defect, if at all, only by a cross action for breach of warranty.—A verdict was, therefore, returned for the plaintiffs—damages, 631l.

## IMPORTANT QUESTION OF LIABILITY.

LIVERPOOL ADVICE.—AUG. 30.

VIGNOLLES v. LEWIS.—This was an action against the Hon. Thomas Lewis, M.P., as one of the directors of the Central Irish Railway Company, to recover compensation for work and labour performed by the plaintiff, as an engineer. The details of the case were long and tedious, but the following were the principal facts.—It appeared, in the case for the plaintiff, that, in the year 1836 a number of gentlemen, connected with Ireland, were of opinion that a railway from Dublin to Sligo, running through the centre of the island, would be a desirable undertaking. Of these, the defendant was one of the most active. Preliminary meetings were held, prospectuses issued, the usual staff appointed, and other measures taken for carrying the project into execution. A provisional committee was formed, at whose meetings the defendant usually attended, and very frequently took the chair. The meetings took place, whether in London or Dublin, usually at the offices of Messrs. Young, Murdoch, and Leach, solicitors to the company. The services of an engineer being required, some discussion took place on the appointment. A person of the name of Walker was mentioned, but it was afterwards decided, very much at the instance of the defendant, that the plaintiff, who had been the engineer of the North Union, the Midland Counties, and the Dublin and Kingstown Railways, should be requested to undertake the office. The solicitors for the company communicated with him, and he accepted the situation on the 6th of June. Immediate steps were taken for completing a survey, and a number of Mr. Vignolles's pupils and assistants were sent to work upon the line. He himself paid frequent visits to Ireland in superintendence of the work up to the 21st of September, during which time frequent meetings of the committee had taken place in London and Dublin, at which the defendant presided, and on which occasions resolutions were come to as to the course which should be adopted, and the measures which should be taken in advancement of the project. On subject of discussion was the site for the Dublin terminus, and on this point some correspondence took place between the plaintiff and defendant with reference to a meeting to discuss the matter in Dublin, and the course which should be adopted respecting it. In one of these letters the defendant says, that the terminus at Kilmashogue would not go down with the Dublin people, and that he must rely upon the skill and industry of Mr. Vignolles to select a better one. On the 21st of September a meeting of the committee took place, at which the possible appointment of Mr. Vignolles to the office of engineer to the Irish Railway Commission was brought under their notice,

and it was agreed that his name should come to appear as the engineer to the company, being replaced by a Mr. Nimmo, one of his assistants, who had previously been carrying on the survey under his superintendence. It was, however, for the plaintiff, alleged that he continued really to superintend the work as before, and that Mr. Nimmo was acting under him, and not as an independent engineer. The plaintiff went to Ireland repeatedly, and carried on a correspondence with Mr. Nimmo when in England. The work was then completed, the surveys made, and the necessary maps and books of reference deposited in the Parliamentary offices. Mr. Nimmo died in 1839. The present action was brought by Mr. Vignolles for the balance due to him for these engineering services. He had received 240l. His charge was 40l. per mile on a line of 126 miles. Much more, it was said, had been surveyed, including the lines which had been abandoned as not eligible.

For the defendant, it was contended, that there was no contract between him and the plaintiff, and that though, as a public man and a Member of Parliament, he had encouraged a project which it was supposed would be of public benefit, he was not himself one of those embarked in the speculation—had never taken or been allotted any shares, and had merely given the provisional committee his assistance and advice. It was alleged that, at all events, the plaintiff had resigned his office of engineer in September, when appointed to the Royal Commission; and that, even supposing he had executed all the work, the charge of 40l. per mile was excessive. Considerable payments had been made to Mr. Nimmo.

The case occupied the whole day, and at nearly eight o'clock the court adjourned, postponing his lordship's summing up until the next day, when, after his LORDSHIP had gone through the facts of the case, the jury retired for a considerable time, and brought in a verdict for the plaintiff—damages 1960l., being the balance due up to 21st September, when they were of opinion he ceased to be engineer to the company.

## UNION FLINT GLASS COMPANY.

GUILDHALL POLICE OFFICE.—AUGUST 28.

Mr. WIRE, the solicitor to the Union Flint Glass Company, at Bromley, attended before Sir James Duke, to reply to the statement made a few days since by some of the shareholders (fully reported in our last), when they sought advice how they might compel the directors to "wind up," the project having failed, the glass being produced at a loss instead of a profit of 20 per cent., and some of the shareholders having been sued for liabilities, hopelessly incurred by the directors.

Mr. Horry, the standing counsel to the company, and the directors (except one), attended with Mr. Wire.

Sir JAMES DUKE expressed great reluctance to hear the explanation, because he thought it was an evil to encourage extra-judicial proceedings before magistrates. This was a case where he could afford no relief to parties. If they would immoderately embark in speculations which they afterwards saw reason to regret, they must get out of them as well as they could.

Mr. WIRE was only anxious to reply through the same channel to the unfair and untrue statements which had been made the other day to Sir Peter Laurie, as they affected the character of a gentleman of the bar and a merchant in the city. What the directors had done in managing the company's affairs had been reported from time to time to the shareholders, and approved by their recorded votes; and at the time the applicants were complaining that the directors would go on, and incur new liabilities, they were engaged in treating to dispose of the works, having previously stopped the manufacture, and dismissed the workmen. A meeting had been called to be held at the works to consider the propriety of dissolving the company. It was untrue that any one of the directors had gone upon the continent to evade legal proceedings, or that there was only one wealthy gentleman in the direction. The directors were persons moving in a respectable sphere of life, able to pay all the liabilities of the company, and they had been working for the shareholders without remuneration. The company had not succeeded; but that was owing to the shareholders having determined to commence business with only one-seventh of the capital that was declared to be necessary in the outset, and not because the estimates were fallacious. It was said the estimate was that the glass would fetch 10d. per lb., but it had been sold at 4d. Some deck lights had been sold at 4d., it was true, but it had never been supposed they would sell at 10d. The 4d. per lb. seized upon by the complainants was an extreme, and not the average price. So as to the consumption of coals forming one half instead of one-tenth of the cost of producing glass. The stopping of the works so soon after they had been set in motion would explain that. When a glasshouse fire was lighted, there was a great consumption of coals in getting up a certain high temperature in the building, which was afterwards maintained by a less supply. The stopping of the work prevented the great consumption at the beginning from being spread over as long a term as at other works. Before he would allow his name to be used in the prospectus as solicitor he thought it right, for the sake of his character, as well as that he might not mislead his friends, to submit the projectors' calculations of expenses and profits to a gentleman who had a practical knowledge of the trade as carried on in London, and who would give him an honest opinion. That gentleman wrote to him that there was a fair prospect of profit, and reasonable grounds to expect success. If capital had been found to carry on the work, and the extraordinary expenses of commencing had been spread over a long period of operations, the profit and loss account would have worn a very different complexion. It was not fair or just to cast imputations on the promoters of a project because the expenses exceeded the original estimate, for if so, the Black wall Railway would be a bubble scheme, and many others, and he thought Sir Peter Laurie's observation as to some companies being conducted in villainy was uncalled for by any of the facts of the Union Flint Glass Company's failure.

Sir J. DUKE said, that was merely a passing general observation, not intended to apply to this company, for Sir Peter expressly said, &c. Mr. Wire's name to the prospectus, as solicitor to the company, was a guarantee that it was not brought out to gull the public, and that he would speak to Mr. Wire about it. Contrary to what the shareholders had stated, it seemed that the directors were winding up and endeavouring to dispose of the works, so as to meet the claims and prevent the shareholders from suffering any inconvenience; but he must not be expected to enter into the items of accounts and particulars adverted to on each side, and express any opinion of them.

Mr. WIRE said, the gentlemen did not wish it, but they did not like to see the company held up as a "bubble" by some of their shareholders without offering a contradiction.—Here the subject was dropped.

## THE NEW ROYAL EXCHANGE.

The contract for the foundation of the new Royal Exchange was finished on Tuesday, and the Gresham Committee met on Wednesday, at one o'clock, to receive tenders for the second contract, which is for the completion of the whole of the edifice. Fourteen of the principal builders of London had been applied to, and it was also determined that each tender should contain two prices—the one being for executing the mason work with the best Portland stone; the other, the additional price for using magnesian limestone, similar to that introduced at the Houses of Lords and Commons. The amounts of the several tenders were as follows:—

Tenders.	Portland.	Magnesian Limestone.
Thomas Jackson .....	£115,940	£124,700
Baker and Sons .....	122,750	127,300
Henry and John Lee .....	126,000	131,000
Samuel Grimsdell .....	126,402	131,248
Grimsdell and Peto .....	127,400	132,000
Piper and Co. ....	128,700	131,100
John Jay .....	129,000	134,000
John and Joseph Little .....	129,800	134,000
Wells and Co. ....	130,150	134,500
Joseph Bennett .....	131,000	135,000
Brigden and Co. ....	131,210	135,000
William Cubitt .....	132,200	136,700
Nicholas Winstanley .....	134,210	136,000
H. Ward and Co. ....	135,000	138,000

The tender of Mr. Thomas Jackson was accepted. The whole of the works are to be completed by Midsummer, 1844.

NEW IMPULSIVE POWER.—(From a Correspondent).—The proprietor of the *Gazette of the Baton-Rouge*, in Louisiana, has succeeded in propelling vessels without the agency of fire. A company, which has obtained a knowledge of the method employed, in constructing a ship upon the principles discovered, as it is said, by M. Langhaene, but which proved rather on the experiments of Tillarier and of Faraday, since the article used is carbonic acid gas, liquefied without a machine of compression. All the invention consists in two large gas producers, the same as Tillarier's, which are supplied with bicarbonate of soda and sulphuric acid. Some drops of carbonic acid, produced and liquefied by this mixture, fall alternately before and behind the pistons, and as this gas has a pressure of at least 93 atmospheres, it undergoes a considerable expansion, which gives impulsion to the machine. Instead of a cumbersome load of coals, a scorching fire, and ponderous machinery, a few tons of carbonate of soda and of acid will suffice to traverse the ocean and circumnavigate the globe in less than three months.

SCINDS CAUSED BY ELASTICITY.—M. Seiller has found it sufficient to place an electric diamond upon a pane of glass in order to produce sounds. When a well-polished sewing needle, suspended from a hair, is placed in a glass bowl, filled with an acid sulphate of copper, the bowl cracks, even after the needle has been withdrawn, and the liquid poured out. Small currents of common electricity become perceptible to the ear, by means of a quiescent straw, struck upon a drum of vegetable paper.



## MINING CORRESPONDENCE.

## ENGLISH MINES.

## ROBINSON MINING COMPANY.

Aug. 30.—I beg to inform you that the lode in the 110 fathom level west is six inches wide, composed of muddle and spar, with a small proportion of ore. In the 100 fathom level west the lode is still about sixteen inches wide, and worth 26s. per fathom. The lode in the winzes, below this level, is intended to be taken down by the end of the present week. The eastern and western stopes, in the back of this level, are still very productive; the lode in the former is twenty inches wide, and worth 45s. per fathom; the lode in the latter is eighteen inches wide, and worth about 28s. per fathom. The lode in the sixty fathom level west continues about six inches wide, and worth 7s. per fathom. The lode in the stopes, in the back of this level, is ten inches wide, and worth about 6s. per fathom. The rise in the back of the eighty fathom level, against Hitchins's shaft, continues in moderate ground. The lode in the stopes, in the back of this level, is eighteen inches wide, and worth about 35s. per fathom. The lode in the seventy fathom level stopes is two feet wide, and worth 26s. per fathom. In the seventy fathom level, east of Wall's shaft, at Flag-jack, no lode taken down. The rise in the back of the sixty-two fathom level, against Hitchins's shaft, and rise in back of ditto, against Bray's shaft, are still in favourable ground. The 100 fathom level east, on the south branch, the eighty east, and the sixty-two west, on the south branch, are without alteration. The tribute stopes are still yielding moderate supplies of ore. We weighed on Friday last July ore, 210 tons 10 cwt. 2 qrs., and sampled August ore, computed 212 tons, of fair quality. F. PHILLIPS.

## TREKTO MINING COMPANY.

Aug. 30.—We have this week commenced sinking the engine-shaft below the thirty fathom level; the lode in it is about two feet wide, producing good ore, and very kindly. The lode in the fifty fathom level, east of engine-shaft, is eighteen inches wide, tribute ground. The lode in the fifty fathom level, west of engine-shaft, is one foot wide, tribute ground. We have suspended the forty fathom level, east of engine-shaft, for want of air, and are rising towards the thirty fathom level for ventilation—also, to open ground for tribute. The lode in the rise is eighteen inches wide, very good tribute ground. The lode in the forty fathom level, west of engine-shaft, is eighteen inches wide, tribute ground. The lode in the thirty fathom level, east of Williams's shaft, is fifteen inches wide, very good tribute ground. The lode in the rise, in the back of this level, is eighteen inches wide, very good tribute ground. The lode in the twenty fathom level, east of Williams's shaft, is nine inches wide, producing a small quantity of ore. The lode in the twenty fathom level, west of John's shaft, is six inches wide, very good tribute ground. The lode in the rise, in the back of this level, is six inches wide, very good tribute ground. Tregellas's lode, at the same level, is two feet wide, producing some good ore, and is kindly. The lode in the ten fathom level, on a part of the Slide-park lode, west of Williams's shaft, is one foot wide, good tribute ground. The lode in the ten fathom level, east of Williams's shaft, is fifteen inches wide, producing some ore. The lode on the south part, at the same level, is ten inches wide, very good tribute ground. We have holed Morcom's shaft in the Mine-park down upon the adit, which is there about thirty two fathoms from the surface. We shall now begin to drive south to cut other lodes. H. WILLIAMS. J. MORCOM.

## TAMAR SILVER-LEAD MINING COMPANY.

Aug. 30.—In the 135 fathom level driving north the lode is three feet wide, composed of muddle, and jack. In the 125 fathom level driving south the lode is from two to three feet in width—one foot of which is composed of soft spar, intermixed with ore. In the 115 fathom level the lode is nearly two feet wide, carrying some good branches of ore. In the 105 fathom level the lode is 2 ft. 6 in. wide, intersected with some rich ore. In the 95 fathom level the lode is 1 ft. 6 in. wide, ore, a promising level. In the 85 fathom level the lode is one foot wide, producing a small quantity of ore. In the 75 fathom level the lode is nine inches wide, carrying a branch of ore. In the 65 fathom level the lode is one foot wide, at present poor, but yet not without some ore. In the 45 fathom level the lode is one foot wide, producing some silver-lead ore, in a rozenal strata. In the winze sinking from the 115 fathom level the lode is about two feet wide, carrying a small branch of ore. I would say, in conclusion, though we cannot report of riches, yet, taking into consideration the favourableness of the ground for driving, the levels are as well as they have been for some time. In the tribute department we have now eighteen pitches, varying from 7s. to 14s. out of 17; and we have also let other pitches, in ground that has been idle for some time, as follows:—two at 17s., five at 18s., one at 19s.—making together twenty-six pitches, employing about sixty-six men. These pitches are all set as heretofore, on the value of the lead only. Our last parcel of ore, computed forty-seven tons, was sold on the 16th instant, to B. Somers, Esq., at 18s. 10s. per ton; and next Thursday or Friday we expect to sample about fifty-five or fifty-six tons of rich silver-lead ore. JAMES SPRAGUE.

## TREGOLLAN MINING COMPANY.

Aug. 30.—I beg to inform you that the lode at the forty fathom level east is still large, and producing good ore, and the ground favourable for driving. We have taken the men from this end to rise against Baker's shaft, which we expect to hole in the forty fathom level in the space of a day or two; the lode in this rise is turning out some good ore, as also the shaft above. At the thirty fathom level east we have passed through a good ore ground during the past week, but at present the lode is unproductive, being disordered with a hard vein of ground. The lode in the winze, below the adit level, is still productive; also the north part of the lode, at the ten fathom level, to the west of Baker's shaft. Our pitches are looking favourable. JAMES NINNI.

## FOREIGN MINES.

MEXICO AND BRAZIL PACKETS.—Her Majesty's packet *Hope*, arrived at Plymouth on Wednesday from Mexico. Here sailing dates were: from Tampico July 3d, Vera Cruz 10th, and Havana 27th. Freight about 175,000 dollars. The failure of Almanac is announced in private letters; he was largely engaged in mining operations, his engagements are said to amount to 1,500,000 dollars. Her Majesty's packet *Prospere* arrived at Havana July 5th, and sailed on the 6th for Belize; and the packet following, the *Alert*, arrived at Havana July 25th, and left on the next day for Belize. A conducta was expected at Tampico. The *Linnet* packet also arrived on the same day with the *Brazil* mails, and about noon, on freight. The dates are: Rio Janeiro July 5th, Bahia 19th, and Pernambuco 24th.—Exchange, 30s.

## IMPERIAL BRAZILIAN MINING ASSOCIATION.

Gongo Mine, June 10.—Since the 1st of the present month our gold produce has been obtained from the backs over Tippett's level, and from arches in the old workings over the seven fathom level, at Allcock's and John's shafts. We have commenced a rise in the back of the fourteen fathom level, east of Collins's shaft, to open ground for backs between it and the shallow level; we have also commenced a rise in the back of Tippett's level, to be holed to the present workings over it, in order to facilitate the same, &c.; the level last mentioned is holed on the opposite side of the mountain. We have commenced to sink a new shaft, about seventy fathoms to the west of Pengelly's shaft, to be holed to the tram and shallow levels; the ground in the said shaft is pretty favourable for working. We have commenced to drive a level from the side of the mountain towards Wray's shaft, for a landing level, through which the stuff from the workings at the same shaft will be trammed direct to the Great Western stamps as it comes from the shaft, instead of being drawn to the surface and carried in horse carts, as at present. We have commenced a rise in the back of the sixty-two fathom level, with an intention to hole it to the fifty-five fathom level, at Rayley's shaft, for ventilation, proving the ground, &c.

N. HARRIS. T. BLANEY. T. PENGELLY.

Rio Janeiro, June 25.—It is a favourable omen that a portion of the little gold produced by the mine at present is from Cunha, west of Blaney's shaft. G. V. DUYAL.

Gongo Mine, June 30.—Since the 10th inst. we have obtained a little gold from the vein over Tippett's level, and from the Cunha vein over the shallow level, also a little from the old workings over the seven fathom level, at Allcock's shaft. The rise in the back of the sixty-two fathom level is holed to the fifty-five, and we have resumed driving the first-mentioned level west of Rayley's shaft. The rise in the back of the fourteen fathom level, east of Collins's shaft, is holed to the shallow level. We have commenced to sink the winze in the bottom of the fourteen fathom level, at Collins's shaft. We have resumed sinking the new shaft south of Allcock's shaft. N. HARRIS. T. BLANEY. T. PENGELLY.

## Gold Report.

	lbs.	oz.	dwt.	grs.
Mined from 14th to 22d June (eight days).....	30	9	7	0
Total from 1st January to 22d June.....	261	9	17	0

P.S.—Mr. Duval still entertains very confident hopes of being able to recover the deposit money.

## BRAZILIAN COMPANY.

Café Branca, June 10.—I enclose the gold report for the past week, which document, I am happy to say, is becoming a more satisfactory appearance. In the mine the water has been in such a part of the week. There is still much stuff to clean up in the shaft; however, I hope early next week we shall be enabled to work the bottom. What with the harvest and holidays we are still very short of native workmen.

June 30.—I addressed you on the 19th instant, and have now only to say, that operations in the mine continue favourable. W. T. GRAFFIERS.

Gold report for week to 18th June, 18 lbs. 3 oz. 9 dwt. 18 grs.

## MEXICAN MINING COMPANY.

San Antonio, June 9.—Nothing particular having occurred since my last communications on the mines, I have thought it unnecessary to transmit a report by this packet. Besides the two cross-cuts now driving in the Soledad for the exploration of the lode in Virginia fields, two cross-cuts were opened in Purisima a fortnight since, therewith to explore any threads that may yet exist in the overlay, and chiefly in the ravine. Barrel ores, of middling quality, and in tolerable quantities, continue being extracted from the Purisima and Soledad mines. From the former mine in particular, through careful picking, I have succeeded in obtaining ores of three useful classes—viz., ores for the barrels, the dry stamp-mill at San José, and the wet stamp-mill at Socorro. For some weeks past I have experienced a want of workmen, to keep all the works in the Purisima going—which circumstance is owing partly to the present sowing season, and partly to the removal of several miners into neighbouring mining districts. The former always was but a temporary evil, and the latter will be removed as soon as the company places such funds at Mr. Francisco's disposal as will no longer force him to sell our silver in Oajima. I feel confident, that as soon as our impotent mining neighbours perceive that their hopes with respect to the dissolution of the Mexican Company were vain, they will be obliged to abandon their mining speculations, and this will be the means of our resuming, with energy, the purchases of ores from foreign mines. I hope Mr. Francisco will then be able to provide sufficient ores from this source for four barrels at Yaviza, while the remaining four barrels will be supplied from the company's mines. I conclude with the wish that my next may communicate the happy result of the trials in Soledad and Purisima. A. KURTZ.

## From Mr. Francisco's letter.

Yaviza, June 12.—In the company's mines the Soledad is the most promising. We are in daily expectation of cutting the vein in a new field, likely to render barrel ore of good quality. With the business some business has been done, and purchases of ores are on the increase. Natidind, returned by the parties who had taken it upon contract, is now in the hands of the business, who are working on Partido. Strange to say, they were not two weeks in possession of the mine before discovering rich ore, part of which is brought to this hacienda on sale. The business at San Miguel have also continued, and I shall be prepared with the first 1000 quintals of barrel ore to be reduced in this hacienda, the new establishment of which is fast approaching a conclusion. Five barrels are finished, with two furnaces, vats for the discharge of reduced ore, and the stone basins for the reception of quicksilver, all the wheels but two are up, and we are wanting three more barrels, two furnaces, two small wheels, and the flooring of stone for the deposit of burnt ore, with sundry wooden troughs to conduct the water to the barrels. This beautiful establishment will then be ready to commence the reduction of ore.

## UNITED MEXICAN MINING ASSOCIATION.

Mexico, July 7.—I beg the usual reference to the enclosed duplicates of my last letters to the court, dated 17th May and 7th ult., and of the usual enclosures as referred to therein, and at the same time, to hand you the following documents in original, &c. &c. I have now the pleasure to acknowledge the receipt, on the 25th ult., per *Hope* packet, of your letter of the 14th April last, together with the several enclosures as referred to therein, by which I learn that you had received all my dispatches to the 23d January last inclusive, especially those of the 18th and 29th December, forwarded via New York.

Mine of Rayas.—In referring the court to the enclosed report of Mr. G. R. Glennie, on the state and produce of the several workings of Rayas, I have, at the same time, to transcribe the following extract, in reference thereto, of a letter received from him, together with the said report:—"Respecting the mine of Rayas, there is nothing to particularise beyond the information contained in the enclosed report upon the actual state of the workings, but perhaps a few observations may be made upon the principal divisions of these several workings. The produce of Purisima has fallen off in quantity since the last report, but the quality of the ores extracted has been superior to that of the period immediately preceding. This improvement in quality was caused by the band of good ores met with in the pit of San Hermos, but it is now doubtful if these ores will continue, a communication having been made with the pit of Santa Rita on the south-east, and the very narrow space between this and the divisional line will cause operations to be carried on upon a very limited scale, even should the band of ore return to its former improved state. Of the upper workings of San Cayetano, Puchito began more promising than it is looking at the present moment; the lode is of good breadth, but very hard, as it is, generally speaking, in all the neighbouring workings. The greater part of the ores extracted from San Cayetano is from this working, where they have been found in a much clearer state than in all the lower points, from which an immense quantity of stuff has to be extracted, in order to procure a few cargoes of common ore. The productive point in Los Reyes has been exhausted, and another is being looked for higher up in the mine, to endeavour to replace the produce hitherto derived from the former working. In Espiritu Santo, the cross-cut ought soon to reach the same body as that followed up by the business in Melancho. This cross-cut is removed a little to the south-east of the best campos in Melancho, and the ores have been of an ordinary quality on this side of the campos—it remains to be seen what may be reached in the cross-cut. The workings of San Miguel are as variable as ever, no good solid ground can be met with which is productive. The produce of these workings, together with Espiritu Santo, has exceeded, by a few cargoes per week, that of the four weeks previous to the last post."

Under date of the 28th ult., Mr. Glennie states to me:—"In the workings of the mine there is no particular variation. The accompanying note of picked ores, shows a fair quantity for a week of five days work, there being scarcely any good ore in that of San Cayetano, which I think it prudent to reduce the levy from 7 to 6 marcos per month; in the other classes there seems to be no necessity for alteration. The average salientness this year, taking the three scrapings of the arrastres, give 64 ounces per month. The plate de ley from Barrera, just received, 362 marcos, contains about 366 grains per marc. The quantity of picked ores produced in the five weeks, ending the 12th ult. (the date of the accounts last made up at Guanajuato, and enclosed herewith), has been 2346 cargoes, or 440 weekly, and the gross amount of sales, on joint account with business, during the same period, has yielded \$16,636 2/3, or \$3727 2 weekly, the former showing a deficiency of 65 cargoes, and the latter, an excess of \$367 2 per week, as compared with the immediately preceding time ending the 31st May, and giving, as a general result of operations, upon estimate, a loss of about \$400 weekly, after providing for the expenses at the mine, and for the reduction of the ore."

Rayas New Contract.—Senator Solis purposes returning to Guanajuato in a few days, he will then have the opportunity to discuss the matter with his co-partners, and determine upon the course to be pursued, and as soon as that course shall be declared, and my own return to Guanajuato be effected, my best and earliest attention will be bestowed and exercised towards bringing this most anxious and important affair to a speedy and satisfactory conclusion.

Remittances.—By the conducta for Tampico, appointed to leave Guanajuato to-morrow, I have instructed Mr. Glennie to forward the sum of \$15,000 in specie to Messrs. Jolly and Baker, at Tampico, directing the latter to ship the same, less the usual charges, by the first British packet, to the order of the chairman of the court of directors. The amount of this remittance, though small, will be found proportionable to my present "ways and means," but triflingly increased since the date of the enclosed statement of receipts, payments, and remaining asset; whilst, on the other hand, provision must be made for the amount of Rayas profits and arista indemnity, payable to the owners, from the 1st January to the 30th ult.

Quicksilver.—The several shipments, together 270 bottles, noticed in your letter under reply, would, I perceive, make up the monthly supply of sixty bottles to the state mentioned therein, and leave 100 bottles to form a "stock in reserve" in case of emergency. Considering the diminished consumption of quicksilver, owing to the diminished standard of the Rayas ore, I fully expect, and believe, the extent of my present stock and advanced supplies will prove quite ample for all purposes, provided it be kept up by the usual monthly supply of sixty bottles, and which I beg may be mentioned.

J. N. HIGGINS.

(The report on the state of workings of the mine of Rayas will be given next week.)

## MINING NOTICES.

NEW IRON COMPANY.—The spirit of enterprise which has lately manifested itself in various important undertakings in this part of the country, we hail as one of the most cheering signs of the times—as a proof that, with even ordinary prosperity in the state of trade generally, this country would be second to none either in the magnitude and importance of its public works and establishments, or the energy and activity with which they were carried on. We allude in particular to the Maryport and Carlisle Railway—to the chemical works at Harrington—to the splendid concerns of Messrs. Tulk and Ley, at Lanes and Sowerby, which these gentlemen have engaged in an extensive and successful manner, and to the enterprise of Messrs. Lindwood, of Cleator, in the iron ore trade, and we have now the pleasure of announcing the formation of a company, which, whether we regard the wealth and enterprise of the parties, or the nature and magnitude of their undertaking, we certainly consider to be one of the most important ever formed in any part of the country of Cumberland. To us it has ever appeared a matter of especial wonder, that whilst few districts in England are more rich in mineral productions than our own—that whilst iron ore, in particular, and that of the finest quality, is found in almost every part of a circuit comprising an area of nearly square miles, and almost to the immediate vicinity of this town—we should yet be under the necessity of shipping that ore to its crude state to Cardiff in order to have it smelted, simply because no body of men had ever

shown the enterprise to erect furnaces in the most desirable of all possible localities—that in which the mineral is produced—abundant, too, as that locality does, with every requisite for carrying on the operation of smelting, at an expense less, we will venture to say, than that at which it can be carried on in any other part of Her Majesty's dominions. At length, however, a company has been formed for this purpose consisting of Messrs. T. Almon, R. Barker, J. Burns, J. Dawson, S. Dugan, T. Hartley, John Hartley, Gifford Hartley, G. Harrison, Isaac Littledale, Jonas Lindwood, J. McMillan, G. Pew, Randleston and Forster, Tulk and Ley, John Spencer, and John Thompson. The furnaces, &c., which are intended to be on a most extensive scale, are to be erected on Cleator Moor, fifty-four acres of which forming a detached portion of Cleator Hall estate—have already been purchased; and as the site chosen is about equidistant from the iron mines of Messrs. Lindwood and the coal-pit of Messrs. Harrison and Barker, the company will thus have the principal material required in their manufacture almost at the very door of the establishment. The expense and inconvenience of shipping the ore to Wales for the purpose of being smelted, has hitherto operated as a powerful check to the spirited working of mines which are known to possess rich treasures of that valuable mineral; but when that check shall be removed, by the erection of furnaces in the locality where the ore is raised, a new impetus will be given to the trade, and an inducement offered to capitalists to embark in mining speculations, of which the probable, nay, the almost certain effect will be, that new mines will be opened, and a degree of vigour and activity infused into the trade of which we have no previous example. When trade flourishes the whole community is benefited; and from the operations of this company we confidently anticipate a high state of prosperity in the iron district.—*Whitehaven Herald*.

MANGANES ORE.—We understand that the Duke of Richmond does not intend working his iron mine on the estate at Tumbolton, owing chiefly to the long land carriage; but that a vein of manganese has been discovered at the same place, which promises to be productive and valuable. Men are at present engaged at this new vein.—*Lancaster Courier*.

## MINE ACCIDENTS.

Pontop South pit, Durham.—On the 19th ult., Mr. E. B. Smith, of Armfield, viewer, fell down the shaft of the Pontop South-pit, where he was professionally engaged, and was killed on the spot. Mr. Smith was a very estimable young man, only twenty-one years of age.

Crofton to Mizers.—On Tuesday last two men, E. Evans and J. Stobbs, were killed by the falling of a drill in a coal-pit belonging to Mr. Harrop, of Hardsley bridge, between Oldham and Ashton. From the evidence adduced at the inquest, it appeared that the pit in which the men were employed had been worked for some time, but that it had been found necessary to sink sixty-five yards deeper to get to a lower bed; they had got within four and a half yards of the required depth, when the men began to drill a hole through to the lower bed. They had provided a drill four feet long and about an inch and three-quarters in thickness, made of iron and steel. Finding it required lengthening, they sent it up in the basket, fixing it in a particular position and tying it with a piece of small string; when it had got about thirty yards from the top of the pit, which was then 110 yards deep, Morris, one of the men in the pit, heard it scratch against the side and gave the alarm. He immediately threw himself on his back, and the drill, as he was thought, got into a corner; at the same moment the drill fell, and when he recovered from the shock he found they were both dead. The drill was from 15 lb. to 20 lb. in weight. Morris stated, as his belief, that the rope in cutting round the which at the top of the pit had slipped, which had given the basket a jerk so as to throw out the drill, and the cord had then snapped; had there been a greater weight in the basket it would not have happened.

## IMPORTANT INVENTION CONNECTED WITH STEAM NAVIGATION.

The new steam boat, the *Germ*, is arrived in our waters, and has made an experimental trip off the Battery. Lieutenant Hunter, the inventor of this boat, and Captain Huxton, of the *Great Western*, took a trip in her yesterday, through our harbour and round the North Carolina, and were highly gratified by her performance. This beautiful little vessel is just fifty feet in extreme length; width of beam at the water line nine feet, at the gunwale eleven feet. The area of her displacement at the greatest breadth of beam is a fraction over twenty square feet. She is propelled easily eight miles an hour, and, with better engines, could easily be propelled eleven miles an hour. She has two engines; each of which, if properly constructed, would be equal to what is called five horse power; they are, however, so inefficiently arranged, as to work at a loss of one-third of what should be their power; and have, therefore, together but six and two-thirds horse power. Calculating on this data, it will be seen that the propulsive power used in the *Germ* is equal to one horse for every three square feet; whereas the propulsive power used for our fastest steamers is equal to three horses for every square foot of displacement. The contrast, therefore, is very great. The well-established fact, that the power necessary to propel a vessel is calculated by the area of her displacement at the greatest breadth of beam, and the advantage of speed known to result from great length of keel, and the application of paddle-wheels of greater diameter, leaves us the interesting and valuable truth clearly self-evident, that the submerged horizontal paddle-wheels (like that in the *Germ*) is a much more efficient propeller than the paddle-wheel now in use. The great advantage consequent on the use of this new kind of propeller, for ocean navigation, is too evident, therefore, to require much stress. By its lateral action, the movement of the vessel is always under control; she is in no danger from bronching to, or bringing by the lee, as by the peculiar power of her paddles in the lateral action she can easily be brought out of the trough of a sea, and to "head it," without the aid of a rudder, or without headway on her. And, more than this, the propellers being at all times submerged, the vessel moves through head sea with but little diminution of her speed. The *Germ* has the appearance of a handsome canal boat. No wheels are seen, very little smoke, and a very small escape pipe, are all that tell she is a steam boat. She moves with great velocity, and perfectly noiseless, with scarcely any rippling of the water. She turns easily, almost upon her own centre. Half the boat is formed into a neat cabin; the forward half is occupied by the engine and boiler, which is on the high-pressure plan. The boiler is made on the locomotive plan (and it appears to have been a locomotive boiler, at some time), with cylinders attached to it, lashed and starboard. In the cylinder works a small piston rod eighteen inches long, from this extends the connecting-rod, about four feet long; and this last rod is attached directly to the paddle-wheel crank. The crank on each side is connected with a vertical shaft that works the paddle-wheels exactly like a man working two coffee-mills with his two hands. The great feature in this boat—that is, the propeller—consists of a hollow iron hub, four feet diameter, with paddles made of boiler iron radiating from it. The superficies of each paddle is one-half of a square foot, therefore the whole diameter of the paddle wheel is exactly five feet. There are two of these paddle wheels, the space between them being occupied by the keelson. These paddle-wheels cannot be injured by the vessel's grounding, for the bottom of the vessel (which can be made of any desired thickness) is always below the paddle-wheels, ground where she may. The *Germ* has an advantage over all vessels otherwise propelled, in not requiring a rudder to direct her course, by reason of the lateral action of her wheels, for she can be perfectly steered by her throttle valves and starting bars. She has a rudder, but it is more for convenience than actual use. It will be easily seen, too, that the hull of a steamer thus constructed must be subject to less wear and tear than all others, for the power of the engine is imparted to a line with the keel, and at a point most available for the propelling. Again, the paddle-wheels are not subject to the irregular action of the sea, and therefore they have always a uniform rotating power, and her engines work smoothly.

On the other hand, if a vessel thus constructed close to sea walls, her paddle-wheels offer less than those of any other steam boat; take off the connecting rods and her wheels do not present a resistance of half a ton out of every ten knots. Her paddle-wheels are of iron, made very simple but strong. They are not liable to get out of order; and although made of boiler iron, are so buoyant as to float, owing to the displacement caused by the hollow hub in the centre. Such is the *Germ*, and such is the new and important principle in the propulsion of vessels which has been dispassionately established by the performance of this little vessel.

The fitness of these propellers to canal navigation has been fully settled by the actual working of the *Germ* on several canals, and the privileges already given to Lieutenant Hunter, by the directors, for the use of his valuable improvement.—*New York Herald*.

AFTER DAMP.—The "after damp," or carbonic acid, left in the atmosphere of a mine after an explosion, is supposed to occasion, in many instances, a greater loss of life than the explosion; at the same time, it renders assistance impracticable. In many cases, the oxygen of the air is not exhausted by the explosion, although from the pressure of 2 or 10 per cent. of carbonic acid it is rendered irrespirable. The atmosphere will be rendered respirable by withdrawing carbonic acid, and a method has been suggested by which this might be effected. A mixture of alkali lime and powdered Glauber's salts, in equal proportions, has a singular affinity for carbonic acid, and that air might be completely purified from that deleterious gas, by inhaling it through a column of not more than an inch in thickness, filled with that mixture, which could be done without difficulty; this lime-filter would be an additional source of security wherever the safety-lamp is necessary, and it should be invariably employed by persons who descended into a mine to afford assistance to the sufferers.



**AT A GENERAL MEETING OF DEPUTIES from the JOINT-STOCK BANKS OF ENGLAND, WALES, AND IRELAND, held on Friday, the 27th ult., at the British Coffee House, Cockspur-street, PATRICK MAXWELL STEWART, Esq., in the chair, the following resolutions were carried unanimously:**

1. That this meeting do, with great pleasure, the report which has now been read, and they present their best thanks to the committee of deputies for their untiring attention to the interests of the joint-stock banks.
2. Moved by Thomas Price, Esq., and seconded by Samuel Perceval, Esq.: That the committee be requested to persevere in their endeavours to obtain those amendments of the law which were enumerated in the letter addressed to Lord Melbourne in January, 1869, and such other amendments as may be deemed necessary; and should it be found impossible to induce the Government to bring those amendments under the consideration of Parliament, the committee be empowered (if they think proper) to introduce a bill on the part of the joint-stock banks, and to call upon each bank for a payment of £20 towards defraying the necessary Parliamentary expenses.
3. Moved by Charles Berkeley, Esq., and seconded by William Meller, Esq.: That the following gentlemen be requested to act as members of the committee of deputies for the ensuing year, with power to add to their numbers:—  

Reginald T. Hewitt, Esq., M.P.	Thomas Price, Esq.
Sir Charles M. Burrell, Bart., M.P.	George Rennie, Esq., M.P.
Philip Courtney, Esq.	Matthew B. Rennie, Esq.
William Ormsby Gore, Esq., M.P.	Robert Scott, Esq., M.P.
William Hawes, Esq.	Joshua Schofield & Co., M.P.
J. C. Hooper, Esq.	Patrick M. Stewart, Esq., M.P.
Charles Hinde, Esq., M.P.	John Stewart, Esq., M.P.
Philip Jones, Esq.	Vincent Stuckey, Esq.
Sir Peter Laurie	Edmund Turner, Esq., M.P.
Donald McLaren, Esq., M.P.	Richard Walker, Esq., M.P.
Sir John M. Taggart, Bart., M.P.	Joshua Walker, Esq.

Mr. Amory, manager of the Stourbridge and Kidderminster Bank.  
 Mr. Bates, general manager of the West of England and South Wales District Bk.  
 Mr. Barnes, manager of the City and County Bank, York.  
 Mr. Berridge, manager of the Bank of Manchester.  
 Mr. Corlett, general manager of the North and South Wales Bank.  
 Mr. Copeland, manager of the Royal Bank of Ireland.  
 Mr. Derry, manager of the Devon and Cornwall Bank.  
 Mr. Gough, manager of the Birmingham and Midland Bank.  
 Mr. Gilbert, general manager of the London and Westminster Bank.  
 Mr. Hedges, manager of the North of England Bank, Newcastle.  
 Mr. Hill, manager of the Waterbury Bank.  
 Mr. Kinnear, manager of the Huddersfield Banking Company.  
 Mr. Marshall, secretary of the Provincial Bank of Ireland.  
 Mr. Robertson, general manager of the National Provincial Bank of England.  
 Mr. Ronald, manager of the Derby and Derbyshire Bank.  
 Mr. Smith, secretary of the National Bank of Ireland.  
 Mr. Springwood, general manager of the Union Bank of London.  
 Mr. Trow, manager of the Hampshire Banking Company.  
 Mr. Thompson, manager of the Warwick and Leamington Bank.  
 Mr. Wilson, general manager of the East of England Bank.

4. Moved by Joshua Walker, Esq., and seconded by Edward Smith, Esq.: That the best thanks of this meeting be presented to Mr. Stuckey, Mr. Gilbert, and Mr. Murray, for having given evidence on behalf of the joint-stock banks before the committee on banks of issue, and also to Mr. Barnes, Mr. Robertson, Mr. Hill, Mr. Bates, and Mr. Wilson, for the readiness with which they consented to be examined before that committee; and that this meeting be highly gratified to learn that the result of the examination has been to induce the committee to avoid recommending the establishment of one bank of issue, a measure which, in the judgment of this meeting, would be exceedingly injurious to the agricultural, mining, and manufacturing interests of the nation.

5. That the cordial thanks of the meeting be presented to the honorary secretary, Oliver Vile, Esq., for his indefatigable attention to the interests of the joint-stock banks, the efficient manner in which the proceedings have been conducted, and the urbanity which has marked all his communications; and that, in testimony of his services as honorary secretary since 1868, he be presented with a piece of plate of the value of £100.

6. Moved by W. S. Wilson, Esq., and seconded by James Marshall, Esq.: That the meeting do express its obligations to Patrick Maxwell Stewart, Esq., M.P., the chairman of the committee of deputies, and they present to him their most cordial thanks for his valuable exertions on behalf of the joint-stock banks, and for the ability and courtesy he has this day manifested in the chair.

Moved by Edward Smith, Esq., and seconded by Robert Scott, Esq., M.P.: That copies of the above resolutions, and of the letter to Lord Melbourne, be sent to all the members of her Majesty's Government, to the members of the recent committee on banks of issue, and to the leading members of both Houses of Parliament; and that the resolutions be advertised in all the daily papers, and in the *Affix*, *London Journal of Commerce*, and *Mining Journal*.

OLIVER VILE, Hon. Sec.

**LONG RAKE MINE, HALKIN MOUNTAIN.**—The public are CAUTIONED NOT TO PURCHASE ANY SHARES in this undertaking without first ascertaining that such shares are duly registered and all calls paid, as a large number of shares have been forfeited by the directors, in consequence of calls or calls being unpaid after due notice of such forfeiture being given.  
 110, George street, Hulme, Manchester. WILLIAM JOHNSON, Sec.

**THE PATENT SAFETY FUSE.** FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS. This article affords the safest, cheapest, and most expeditious means of effecting this very hazardous operation. From many testimonies to its usefulness with which the Manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c., &c.:—

"I am very glad to hear that my recommendations have been of any service to you. They have been given from a thorough conviction of the great usefulness of the Safety Fuse, and I am quite willing that you should employ my name as evidence of this."  
 Manufactured and sold by the Patentees, RICKFORD, SMITH, and DAVEY, Cusburne, Cornwall.

**NEWTON'S LONDON JOURNAL OF ARTS, No. CXVII.** (Unbound Series), for September, illustrated by three plates, contains the following specifications:—Elkington for gliding, silvering, &c.; Elkington and Burrell for coating metals—Silver, ditto, by electricity—G. and H. Elkington for gliding by ditto—Lockett, engraving cylinders by ditto—Mabey, embossing by ditto—Jones, copper vessels by ditto—Roberts's fire escape—Atkinson's thrashing and winnowing—Palmer's ploughs—Hancock's castors—Lusk's ditto—Lees for dyeing—Harvey's sulphur furnace—Transactions of the Society of Civil Engineers—Review of London Electrical Society—scientific adjudication, Marling v. Kirby—English, Scotch, and Irish patents, and colonial phenomena.  
 Published monthly, price 7s. 6d., by W. Newton, at the office for patents, 60, Chancery-lane, and York Hall buildings, Manchester; Sherwood and Co.; and Simpkin and Marshall, Stationers' court.

#### PROTECTION OF TIMBER AND CORDAGE FROM THE ACTION OF DRY-ROT.

We find that experiments are still going on, under various patented processes, of testing the merits of the several inventions, having for their object the preservation of timber, cordage, canvas, &c.; the fungus pits, in Woolwich dock-yard, which had been closed in August, 1836, having been recently opened for the purpose of testing the virtues of Sir William Burnett's process, for rendering wood, cordage, and all descriptions of woollen, free from the effects of dry-rot. The result, it would appear from the report of the officers deputed by the Admiralty to superintend the experiments, is in every way successful, the prepared wood being as clear and sound when it came out as when first deposited. Some samples of prepared canvas and calico were submitted to the same test, with their counterpart unprepared, and the former were as sound as when taken from the loom, whilst the unprepared was entirely destroyed. In consequence of these favourable results, it is said that the Admiralty have been induced to take the patent under their especial patronage, and a large iron tank is being erected, with air and force pumps, for the speedy saturation of timber in the royal dock-yard at Portsmouth. Other tanks are in the course of formation in Chatham dock-yard. There is some reason to doubt the correctness of the statement that the Admiralty have taken this patent under their especial patronage; and, without further information than we at present possess, we doubt whether the process is more perfect than that patented by Mr. Margary, which has been frequently noticed in our columns, and which, for cheapness and efficacy, we believe to be pre-eminent. We shall be ready, at all times, to render further particulars as regards Sir William Burnett's patent, which may come before us, and to compare the merits of the several patents.

**LEAD.**—Chemists have long turned their attention towards the different combinations of water and acetic acid with oxide of lead, and which are so valuable to medicine, to the arts, and to analysis; but the subject is still incomplete. M. Payen, however, has been making some important progress in this branch of chemistry, and the most interesting part of his labours consists in the discovery of a new acetate of lead, and an equally new combination between water and potash of lead. In the course of his researches, he has been able to explain several phenomena, the causes of which have been hitherto unknown, and which are highly interesting in the matter of analysis.

**INEXHAUSTIBLE MOUNTAIN.**—M. Mahut, jun., has just completed a curious model of the Artois mountain at Gravelle, on a scale of one inch to a thousand; the tube is of glass, and the different strata through which the well passes are thus exhibited, and specimens of the earth and sand through which the well was bored are placed by the side of the model.

**IRON TRADE.**—This trade is still in a very depressed state, and prices are still looking down; merchant have been offered by a London broker on the Royal Exchange within the last week, at 62, per ton, free on board at Cardiff. The iron is Mather's make, and equal to any of the same class.—Continued.

#### PUBLIC COMPANIES.

##### MEETINGS.

Kent Water-works	George and Vulture	Sept. 6	12.
S. Metropolitan Gas-light & Coke Co.	Three Tuns, Tavern	6	12.
Great North of England Railway	Office, Darlington	7	11.
London and Croydon Railway	London Tavern	7	11.
Commercial Bank Company	104, Fenchurch-street	17	1.
North Coast Iron and Coal Company	44, Finsbury-square	21	2.
Bolton Mining Association	Warford-court	28	12.
Great W. Charlotte Mining Ass'n.	George and Vulture	29	12.

##### CALLS.

Hibernian Mining Company	Sept. 10.	Paynt, Balshridge, and Co.
Redmore Mining Company	10.	Bosanquet and Co.
Tregulian Mining Company	30	London and Westminster Bk.
British Colonial Bank	31.	Oct. 12.
The Miners' Company	16.	13, St. Swithin's-lane.
		Glyn and Co.

##### DIVIDENDS.

Birmingham and Midland Bank—4 per cent. for the half-year.	Manchester and Liverpool District—7s. per share for the half-year.
Coventry Union—5s. 1d. per share.	Manchester and Salford—6 per cent.
Commercial Union—20 per cent.	Mossbourne—10 per cent.
Cumberland Union—6 per cent.	Nottingham & Nottinghamshire—8 p. ct.
Clydebank—6 per cent.	Newcastle-Tyne—6 per cent.
GloUCESTER—10 per cent., and a bonus of 15s. per share.	Newcastle, Shields, &c. Union—10 per cent.
Dudley and West Bromwich—8 per cent. for half-year.	National Provincial of England—6 p. ct.
Huddersfield—12s. per cent.	Northamptonshire Union—7s. per share for half-year.
Halford Commercial—11 per cent.	Stourbridge and Kidderminster—10s. per share for the half-year.
Hampshire—10 per cent.	Strophshire—7s. per cent., which, with 5 per cent. paid in February, will be 12s. per cent. for the year.
Lincoln and Lindsey—10 per cent.	Union of London—6 per cent.
London and Westminster—6 per cent.	Union of Manchester—5 per cent.
London Joint Stock—5 per cent.	Wolverhampton & Staffordshire—7 per cent.
London and County—8 per cent.	
Liverpool Union—8 per cent. half-year.	

#### NOTICES TO CORRESPONDENTS.

Several articles are in type, the insertion of which are precluded from the length to which the observations are carried on the British Iron Company. The Durham County Council, the Meeting of the Deputation of Joint-Stock Banks, the *Talcares Adventure*, and other subjects, will be noticed in our next.

The communications of several correspondents must necessarily stand over for the reasons assigned in the preceding notice.

Reports of the meetings of the Cornhill and North Devon Mining Company, and Bristol and Exeter Railway, in our next.

## THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, SEPTEMBER 3, 1861.

We suggested rightly when we expressed an opinion that the affairs of the British Iron Company were likely to afford ample latitude for special pleading, and give employment to the lawyers; while it is much to be lamented that some parties interested in the company do not come forward as mediators between the belligerents. On the one hand we find the directors possessing power, and, moreover, the confidence of a large portion of the proprietors (as we are led to judge, by the proxies of absentees being placed in their hands, with discretionary power to use them), opposed by the "united shareholders," who boast that they now represent the interests of two-fifths of the proprietary, and who, although in a minority, are steadily increasing their numbers. The absent proprietors having been aroused from the lethargy which has so long been manifested on their part, we cannot now doubt but that some measures will be proposed, whereby litigation may be avoided, and the property worked with advantage—to effect this, however, it will be necessary, on both sides, that concessions should be made, and, forgetting the past, there should be a cordial co-operation on the part of the directors and their supporters with the "united shareholders" in carrying out a scheme, having for its object the protection of the interests of the shareholders and avoiding litigation.

To demonstrate more clearly the necessity for a mutual understanding being arrived at, it is only necessary for us to refer to the advertisements which appeared in our columns of last week and in the present Number, to show at once, without entering into the minute detail of the arguments adduced on the part of the "united shareholders" as to the illegality of the acts of the directors, that there is a fruitful source from whence may be derived food for briefs to an extent impossible to be foreseen. In the first instance, we find the "united shareholders" declare, that at the special general meeting, held on the 26th ult., convened for the purpose of deciding on the resolution thereat proposed, viz.—"That the British Iron Company be dissolved"—the same was carried; the votes, including proxies, being 61 in favour of the resolution, and only 53 against it. Thus runs the statement of the "united shareholders," who further announce, that another special general meeting will be held to confirm the dissolution of the company, in pursuance of the 31st clause of the Deed of Settlement, which meeting, we presume, must be called by a further requisition, sent into the directors, who, as they do not admit the premises assumed by the "united shareholders," will, doubtless, decline holding the meeting; the consequence of which will possibly be, that the requisitionists will then hold the same—such being, by the directors and their legal adviser, held as illegal, the object being to confirm an act, they contend, never legally done. Such is the first advertisement. We now pass on to the counter-advertisement of the directors, which is in substance this:—That the resolution had for its object, not the dissolution of the company, but the appointment of a committee of proprietors "to investigate all the affairs of the company, with the view to its dissolution." Here, then, we find at starting a difference to exist as to the terms of the resolution proposed; and on reviewing the advertisement and requisition convening the meeting, we find it expressly stated, that the object of such meeting is "to consider and determine upon the following resolution:—That the British Iron Company be dissolved." It is, therefore, clear, the resolution embodied in the advertisement of the directors could not form subject-matter for the consideration of the meeting—the Deed of Settlement providing, by its 9th clause, that the business of all special general meetings shall be strictly confined to the objects for which such meetings are called; and we need hardly observe on the difference between the appointment of a committee "to investigate" and the decision of a meeting. With whomsoever this alteration of the object of the meeting (as expressed in this amended resolution) took place, they have themselves to blame for rendering the proceedings nugatory, inasmuch that the 9th clause of the Deed of Settlement provides for the strict adherence to the objects of the meeting expressed in the circular convening the same.

We purpose following the words of the advertisements closely, and, after having well digested the clauses of the Deed of Settlement, to which reference is made, then proceed to offer our remarks on their construction, so far as affects the question at issue. It appears from the representations of the directors, that, on the resolution being submitted to the meeting, twenty-five hands only were held up, the greater portion of which were disqualified from voting, not having paid up the calls made on their respective shares. Some proxies, it is also asserted, were tendered by a party who, under the 15th clause, was disqualified from voting, which proxies were thereupon rejected by the chairman, and, on the show of hands being taken, as to the adoption of the resolution, fifty-three were against it—leaving the proposer in a minority of twenty-eight. The advertisement goes on to say, that the votes claimed in virtue of proxies were thirty-six, representing 180 shares, while the votes held by the directors are represented as being 700, or 3500 shares—a number which, if brought forward on the occasion, would most undoubtedly have left the "united shareholders" in a large minority. Proceeding further, we learn from the adver-

tisement in the Journal of to-day, that the resolution was—"That the British Iron Company be dissolved," it being distinctly stated, that the terms of the resolution, as published by the directors, were incorrect. The advertisement further observes, that twenty-five qualified shareholders voted for the dissolution, and a qualified proprietor put in proxies of thirty-six shareholders, holding 1435 shares, which entitled them to 287 votes, also in support of the resolution, whilst there were only fifty-three hands held up against the motion, and thus claiming a majority in favour of the resolution, which it is the object of the "united shareholders" to confirm at a subsequent meeting.

That the question may be fairly understood, and denuded of all technicalities, or party bias, we have, at some pains, carefully gone through the Deed of Settlement, and more especially directed our attention to those clauses, on the construction of which the question now at issue is involved. Without assuming the powers vested in legal functionaries, we will at once propound our reading of the several clauses, taking claim for the basis being founded on common sense, and the general interpretation such as must be given to the words of the Deed of Settlement. Having done so, and showed that there is room for legal disquisition, we shall at once enter on the project of mediatory measures being adopted, and subjoin certain propositions submitted to us, and which, with certain alterations we have made, appear to be well deserving of consideration on the part of the shareholders.

The clauses in the Deed of Settlement on which dependance seems to be placed by both parties, are those ranging from 10 to 18, including, however, the 29th, and one or two other clauses of less moment, which we purpose now dissecting, and seeing how far the construction, or definition of the several clauses, on the part of the directors and the "united shareholders," agree with the opinions we entertain. Commencing with the 10th clause, we there find it prescribed, "that all questions relating to any business matter or thing which may be transacted or agitated at any general meeting, shall be decided by a show of hands, unless any five or more proprietors, who shall be present at the meeting, and be qualified to vote," &c., shall demand a ballot. The 11th clause confines the right of voting at all general meetings, or ballot, to such proprietors who shall have held their shares at least six calendar months before the time of meeting, and who shall have paid up all calls which may have been made—each shareholder, by the 12th clause, being entitled to one vote for every five shares held by him. The 14th clause provides that no person shall vote who is personally interested beyond his right of a partner. The 15th and 16th clauses, taken with the 10th, already quoted, appear to be the most important, and on which the main question rests, so far as regards the points mooted in the advertisement. The 15th clause distinctly empowers all proprietors qualified to vote at general meetings, "to appoint a person to vote and act for him by proxy," the person so appointed being a qualified proprietor. The clause runs thus—

"That every proprietor, qualified to vote at the general meetings and at ballots shall be entitled to appoint a person to vote and act for him by proxy, either at a definite or indefinite number of general meetings or ballots, but no vote or act by proxy at any general meeting or ballot shall be admitted, unless the person appointed to vote and act as proxy shall be a qualified proprietor, and shall be nominated in writing under the hand of the qualified proprietor availing himself or herself of his or her right so to vote and act by proxy; and every proxy shall continue in force for so long a time as it shall be expressed to be given, or until revoked by writing under the hand of the proprietor giving the same, or until such proprietor shall be present in person at any general meeting or ballot."

And the 17th clause, to which we have to direct particular attention, provides—

"That a majority of three-fourths of the number of votes given at any special general meeting shall be requisite to decide any question relating to the making of new regulations and provisions for the company, or the amending, altering, or annulling all or any of the existing regulations and provisions of the company, or the dissolution of the company, which may be submitted to such meeting."

Which is further confirmed by that immediately following, providing for all other questions being determined by a simple majority of the number of votes. Such, we believe, to be the principal clauses which affect the question now raised, and which may be considered as embodying the several points at issue.

The directors, in the first instance, contend that, by the 10th clause, all questions must be decided by a show of hands, at the general meetings of the company, except when a ballot may be demanded, when the votes of the proprietors present, as also proxies, may be received—proxies having no power to vote at a general meeting, the decision being determined, as provided by the 10th clause, by a show of hands. This involves the question whether the resolution proposed at the meeting, held on the 26th ult., was carried or not. On the part of the "united shareholders," who refer to the 16th clause in support of their position, it is assumed, that the words of such clause are in themselves conclusive, if taken separately and apart from the 10th clause, but which, if taken in connection, are at variance with, and renders the terms of the latter clause nugatory, inasmuch, that the 16th clause provides, that any proprietor who shall be absent, but having appointed a proxy, shall be held and considered as present by such proxy, and that all the votes and acts of the proxy so nominated shall be effectual and valid, as if such proprietor had been present and personally voted at such general meeting. Having thus taken the several views entertained by the respective parties, we think that a careful perusal of the 16th clause will convince the shareholder that it was intended thereby to empower him to vote by proxy at a general meeting, and not to confine him to vote by proxy at ballots resulting therefrom.

Admitting this reading to be correct, it then remains to be considered whether the decision of the meeting of the 26th ult. was such as to warrant the "united shareholders" in declaring that the resolution was carried, whereby (subject to a confirmation at a subsequent meeting) the company was dissolved. It appears to us, by the 17th clause, that it requires a majority of three-fourths of the number of votes given at any special general meeting to decide as to any alteration in the regulations and provisions of the company, or its dissolution—which latter was the specific object for which the meeting was convened. The information before us is not sufficient to warrant a conclusion being arrived at with any degree of certainty, inasmuch, that, so far as the number of proprietors present in person or by proxy, in favour of the resolution, were not three-fourths, but, according to the advertisement, 61 out of 114. If, on the other hand, we take the number of votes in favour of the resolution, which are stated to be 312, including the proxies, and which we consider, under the 16th clause, to be fairly entitled to vote, we then have to learn what number of votes are represented by the fifty-three dissentients; and, further, to ascertain that the votes of the supporters of the resolution were full three-fourths of those present. It will be seen, therefore, that the question remains undetermined, while we believe the reading of the directors to be wrong, as to the construction of the 16th clause, although we are not prepared to admit that the "united shareholders" have acquired the triumph to which they lay claim.

We must now pass from the consideration of this point in dispute to another of far greater magnitude, as it involves the question of the legality of the acts of the directors in increasing the liabilities of the shareholders and the alterations in the Deed of Settlement affecting the management of the affairs of the company. In discussing this point we have to acknowledge the liberal course pursued by the directors of the company, and the facilities afforded by its secretary in the acquisition of information, and the opportunity afforded us of referring to the minutes of the general meetings and other documents of the company necessary for arriving at a correct conclusion.

We shall briefly narrate the several steps taken by the company,



to which the "united shareholders" object, as not being strictly legal, and on which they found their opposition. The company was formed in 1824, and a Deed of Settlement having been drawn up, was subscribed by the respective shareholders, whereby it was provided that the capital of the company should be 2,000,000*l.*, divided into 20,000 shares of 100*l.* each, and that the board of directors should be constituted of sixteen members. In the month of October, 1826, it being, in the opinion of the directors and other influential shareholders, unnecessary to raise more than 1,000,000*l.* capital, a special general meeting was held on the 17th of that month, whereat it was determined that the capital should be confined to 1,000,000*l.*, the number of shares remaining the same, but the liability restricted to 50*l.* per share instead of 100*l.*, as originally proposed. The resolution to such effect having been passed, the same was unanimously confirmed at a subsequent meeting, held on the 7th November; other resolutions, having for their object certain alterations in the Deed of Settlement, having been also carried and confirmed in like manner. The principal alterations, beyond that of limiting the liability of shareholders to 50*l.* per share, had reference to the number of directors, which were, by such resolutions, reduced—the board, which consisted of sixteen members by the original deed, being limited to nine, and three auditors being appointed instead of four; the qualification of a director being fifty shares. A further meeting was held on the 4th of December, 1826, which confirmed the amendment passed at the antecedent meeting, affecting the qualification of a director.

We do not find that any further alteration took place in the Deed of Settlement until 5th June, 1833, when a special general meeting was held, at which it was resolved unanimously, that a further alteration in the deed should take place, and that the number of directors be fixed at six, and the office of deputy-chairman abolished; which proceedings were submitted at a subsequent meeting, held on the 20th June, 1833, but not then confirmed by show of hands; a ballot having, however, been demanded, the same took place, when there appeared in favour of the proposed alteration 2126 votes, and 89 against. The resolution was thereupon declared to be carried, and the reduction took place accordingly. On the 18th June, 1836, the meeting having been rendered special, a further alteration of the deed was made, having reference to the powers vested in the directors, by which it was resolved that four should form a quorum; this resolution was confirmed at a meeting held on 9th July following. We now arrive at the measures adopted at a special general meeting held on 4th May, 1838, which may be said to embrace the whole question at issue between the "united shareholders" and the directors—viz., the power of the meeting to rescind the resolutions passed 17th October, 1826, and confirmed 7th November, 1826, which, as we have already shown, reduced the capital from 2,000,000*l.* to 1,000,000*l.*, the shares being declared to be 50*l.* instead of 100*l.*, and the liability of the shareholders limited. The objects of this meeting, as expressed in the circular addressed the shareholders, and embodied in the resolutions passed at the meeting, were to consider the propriety of rescinding the two resolutions passed in 1826, limiting the capital of the company to 1,000,000*l.*, and, in case of such resolutions being rescinded, then to determine on the manner in which future calls should be made, and whether the same should be limited; also, to annul the 86th clause, so far as related to the provision made for balance in hand, and power of directors to make calls—to alter time of holding meetings—to apply for letters patent, and alter the Deed of Settlement, so as to bring the company under the authority of statute 7, WILLIAM IV., and VICTORIA I., chap 73; and, further, to authorise the directors to raise a loan of 300,000*l.*, to be applied to the purposes of the company. Resolutions to such effect were accordingly carried unanimously, rescinding the former resolutions for reduction of capital, authorising the directors, at such times as they might deem fit, to make calls not exceeding 16*l.* per share, with the view of paying off the proposed loan (of which 5*l.* per share has been since called). Half-yearly meetings, to be held in April and October, were also agreed to, and the other resolutions passed in accordance with the terms of the circular, expressive of the objects of the meeting; these resolutions were confirmed at another special meeting, held for that purpose on 25th May, 1839, there being one dissenter.

On the 20th May, 1839, the annual meeting was rendered special, for making a further alteration in the management; it being resolved at such meeting—"That thenceforward the number of directors should be extended to seven, of whom three should be managing directors"—which resolution was confirmed on the 10th June, 1839. Again, on the 19th May, 1840, the annual general meeting was rendered special, for the purpose of giving authority to the directors to make further calls, in addition to the 16*l.* per share previously agreed to, to the extent of 9*l.* per share (of which 7*l.* has been called), or, in all, 25*l.* per share over and above the 50*l.* per share to which the original capital had been reduced, and also to raise money by way of loan—such loan to be repaid by calls made on the proprietors. The resolutions passed also comprehended the appointment of a committee, to finally arrange and settle with Mr. ATTWOOD, and to effect which object, the loan proposed to be raised was not to exceed 250,000*l.*; provision was also made for consent being given to the transfer of shares by any two directors. On the 9th June, 1840, these resolutions were unanimously confirmed.

We have now laid before the proprietors an abstract of the proceedings of the company, so far as relates to the Deed of Settlement, and the rescinding or alteration of the laws or regulations by which the company is governed, and, previous to submitting the views to which we have to invite the especial attention of the shareholders, will offer some few observations on the clauses of the deed already cited, and the proceedings of the company which immediately refer thereto. It will be seen, by the 10th clause, that all questions at general meetings shall be determined by show of hands, while the 15th and 16th clauses declare the right of absent proprietors voting at such meeting by proxy; this contradiction is a key to the difference of opinion existing as to the meaning of the deed. We will now take the 17th clause, which, by implication, empowers a majority of three-fourths of the proprietors assembled at a special general meeting, called for that purpose, to amend, alter, or annul all or any of the existing regulations and provisions of the company, and which majority shall be requisite to decide any question relating to the making of new regulations and provisions, as also to determine on the dissolution of the company. It appears to us, on perusing the deed, that it is drawn with much carelessness; certain clauses, which are said to affect special general meetings, being couched in terms which renders it questionable as to whether the words are not confined to general meetings, inasmuch, that, in other clauses, we find special general meetings strictly defined. We make this remark from the vague manner in which the deed is drawn, which admits of much special pleading, and hence the greater probability of lengthened litigation.

Before taking leave of the deed, it may be well to remark on the 29th clause, which distinctly authorises the amendment, alteration, or annulling, either wholly or in part, all or any clauses of the deed, and to make new regulations in lieu thereof, provided such amended or altered regulations shall not annul the provision made for limiting the individual responsibility of each shareholder to the amount of his share in the capital of the company for the time being. Now, as the deed sets out by stating the capital to be 2,000,000*l.*, in shares of 100*l.* each, the question arises whether an alteration having taken place limiting the responsibility of the shareholders to 50*l.* per share, a special general meeting, in the face of this clause,

has the right to increase the liability of the several proprietors on the amount of his share in the capital of the company for the time being—such shareholder having purchased his share, and the same being transferred under the provisions of the Deed of Settlement as a 50*l.* share, and not one of 100*l.* It is, perhaps, unnecessary for us to pursue this question further—legal objections and technical quibbles can at all times be raised, and it is to avoid litigation that we direct attention to these several points, which require not legal wisdom to decide upon. In closing this portion of our notice, we have only to add, that if the 17th clause be taken by itself and admitting the 10th, which, with one exception, does not appear to have been questioned, the directors have throughout their proceedings strictly adhered to the terms of the Deed of Settlement; the alterations are strictly legal, and all matters done in accordance with the regulations of the company, which distinctly empower special meetings of proprietors to alter or annul the existing laws or regulations, and which may be assumed as embracing the question of capital.

We now proceed to the consideration of a project whereby the property of the shareholders may be protected, and litigation avoided. In submitting the following proposition to the proprietors, we feel it to be only due to Major RICHARDSON, to award him any merit which may be due, as regards the equitable grounds on which it has been drawn (allowing for the views taken by that gentleman and the "united shareholders"); at the same time, it is right to observe, we have not adopted it, without having well weighed the projected measure, and made such deviations as appeared to us necessary for the protection of the interests of all parties. We do not pretend to say that the figures submitted are the best—other arrangements might be effected, perhaps equally, or more, satisfactory. We have but one object—that is, to bring about an amicable arrangement—to provide the means of carrying on the works, by a fresh supply of capital—and to secure the confidence of the respective shareholders, who, by putting their shoulders to the wheel, may yet render the undertaking one of a productive nature, when once rescued from the legal gentlemen, and the profits no longer absorbed by the interest on the debt due to Mr. ATTWOOD, or the loan notes.

One thing is quite clear, that there are liabilities; these must be met, and, without entering into the legal question, it must be admitted there is a moral obligation on the part of the shareholders. The following proposition may, therefore, help the object in view; under any circumstances, however, we shall not regret having devoted attention and space to the full consideration of the subject.

#### PLAN OF ARRANGEMENT.

1. That to avoid any question arising from the construction to be placed on clauses in the old Deed of Settlement, that the same be cancelled, and a new deed be prepared, which having been approved at a special general meeting of proprietors, and confirmed at another special general meeting to be held for that purpose, shall be binding.
2. That such deed shall give full sanction to, and express the adherence of, all parties thereto of all acts done by the directors or officers of the company (subject to the conditions contained in the following clauses) up to the time of signing such deed.
3. That such shareholders who may not sign or express their adherence with the terms of the deed, after the same shall have been determined upon, at a special meeting of proprietors, and subsequently confirmed, shall, after the expiration of one calendar month, be considered as no longer proprietors in the company, and that they shall virtually forfeit such holding and interest as they may possess, and be relieved from all liabilities arising therefrom.
4. That with the view of constructing a Deed of Settlement, whereby the present shareholders shall be relieved from responsibilities, and, at the same time, advantages afforded them by the proposed amendments and regulations, it be determined, with respect to such deed, that the following bases be adopted:—
  1. That the original shares of the company, which, agreeable to the Deed of Settlement, were declared to be 100*l.* per share, but reduced by the resolutions passed at the meeting of 17th Oct., 1826, to 50*l.* per share, shall be held and considered as shares of 50*l.* each, and not shares of 100*l.*, and that no further calls beyond 5*l.* per share be recognised.
  2. That the directors be empowered to create and dispose of 25,000 shares of 25*l.* each, thereby raising a capital of 625,000*l.*, which shares shall have a preference in the payment of par, with interest at the rate of 5 per cent. per annum, before the holders of the original shares shall be entitled to participate in the profits of the undertaking or assets arising from the disposal of the property and dissolution of the company.
  3. That in the appropriation or distribution of such shares, those shareholders who have paid the several calls of 5*l.* each, made over and beyond the 50*l.* per share, shall receive new shares with 25*l.* paid thereon, in proportion to the amount so subscribed by them, the new shares being appropriated according to the amount already subscribed on the old shares.
  4. That the holders of shares of 25*l.*, and on which no call subsequently made (15*l.* in all) beyond such amount shall have been paid, shall have the right at once to cancel the same, and rid themselves of all responsibility.
  5. That such proprietors who shall be desirous of prosecuting the operations of the company, having paid up the amount of 50*l.* per share, shall, on the further payment of 15*l.*, be entitled to a preference share of 25*l.*, being an advantage of 10*l.* in the taking of such new share, the original share being declared cancelled.
  6. That in such cases where the holder of original shares shall decline to avail himself of the power of forfeiture, or that of subscribing further capital, it be provided that he shall have the option of exchanging the old shares for new or preference shares, the old shares being valued at 5*l.* per share, and consequently five original shares representing one new share, with all calls paid thereon.
  7. That no further issue of promissory notes over those lately issued shall be legal.
  8. That if the company's works and property be not in a state to yield a profit during the years ending May, 1841, and May, 1842, so as to justify the continuance of operations, that the company be forthwith dissolved.
  9. That provision be made for the election of directors and auditors, as also their retirement from office, and further providing for a managing director or directors, the transfer of shares, and the accounts being duly audited.
5. That upon such Deed of Settlement being prepared, and signed by the holders of at least three-fourths of the number of shares of which the company is constituted, the same be binding upon the shareholders generally, and accepted in lieu of the original deed.
6. That all questions in dispute be finally settled by the adoption of such deed.

Such are the suggestions we submit to the proprietors for their consideration, as a means of avoiding endless litigation, and the total destruction of the property, which must necessarily ensue if the differences now existing be not adjusted.

We have, since writing the foregoing, received a communication from Mr. W. R. STANDISH MOTTE, Barrister-at-Law, which will be found inserted in our columns. We have not space to offer any lengthened remarks on that gentleman's letter, but, as there are one or two points on which we differ, it may be well to note them. In the first place, Mr. MOTTE contends that a meeting, especially called for determining on the dissolution of the company, can enter into a resolution for the appointment of a committee to investigate its affairs with a view to its dissolution. Here we are at issue, and we stake our Editorial experience against that acquired by Mr. MOTTE at the bar, and would advise that gentleman and the "united shareholders" carefully reading the Deed of Settlement. Again, the argument of Mr. MOTTE as to the proxies, and the illegality of the calls, is completely "begging the question;" and further, that gentleman must be aware that, if he be right in his conclusion, the act of the proprietors at the late meeting requires confirmation within a specific period, to effect which no measures appear to have been resorted to. The proposition of Mr. MOTTE varies from that submitted by us—his object being to inquire into past errors—ours being to bury the past in oblivion. With the second proposition made by him, of stopping all litigation by final arrangement with Mr. ATTWOOD, we fully concur, and, indeed, understood such had been effected. On the remaining suggestions we do not deem it necessary to remark, except that we think the shareholders who are unwilling to remain should be well satisfied to withdraw without a bonus, or to avail themselves of the advantage proffered in the proposed arrangement to which we have referred. We regret Mr. MOTTE should not have written his letter, conveying as it does the opinions of a barrister, with more care, for, after all, whatever may be the business view and real merits of the question, the interests of clients are too frequently marred by either the ingenuity of counsel on the one side, or want of talent on the other, in trusting on it in courts of law or equity.

#### PROCEEDINGS OF PUBLIC COMPANIES.

##### TRETOIL MINING COMPANY.

The general meeting of the proprietors in the above undertaking was held at the offices of the company, 6, St. Mildred's-court, on Monday, the 30th ult.

G. H. HARRPALL, Esq., in the chair.

The advertisement convening the present meeting, and the minutes of the last having been read, the CHAIRMAN proceeded to read the directors' REPORT.

The directors feel great pleasure at this annual general meeting of the company in laying before the shareholders a very satisfactory report of its affairs. It will be found by the first annual report that the mine had from its profits at the end of June, 1840, paid off liabilities to a considerable amount, still leaving a balance of 726*l.* 11*s.* 3*d.*, which, added to 4380*l.* 12*s.* 4*d.*, will show the profit for the year to have been 5107*l.* 4*s.* 1*d.*—out of the 4380*l.* 12*s.* 4*d.* the directors having paid a dividend of 10*s.* per share, amounting to 200*l.*, the sum of 2000*l.* 12*s.* 4*d.* is left in favour of the company. This balance may vary from 50*l.* to 1000*l.* one way or another, on account of the price, carriage, and weighing the ore for sale on Thursday next. The directors think it proper to state that all the ore raised from Tretoil Mines to the present time, amounting in value to about 27,000*l.*, has been the produce of one lode called the Slide-park lode, and two or three branches near it. This lode and the branches are still very productive, and likely to continue so; but several other lodes and branches have been discovered in the mine at the adit level, the greater part of them producing ore, and having very promising appearances, being productive either at the same or deeper levels. One of these lodes, called Tretoil's lode, has been lately cut twenty fathoms below the adit; it is at present about two feet wide, producing some good ore, and is kindly. From the circumstances of the Slide-park lode having been productive at and above the adit level, which, upon that lode is only about twenty fathoms deep, it has been thought advisable to carry this level southward beyond a lode called the Mine-park lode, for which purpose a shaft has been sunk at a point where it has just now come down upon the level near the Mine-park lode; this level, in going southward, will be from forty to fifty fathoms deep, and will intersect lodes which are known to exist in that direction, and which may ultimately be of very considerable importance to the mine. The Mine-park lode above alluded to has been driven upon the adit level, and is of a very promising character; it will be again intersected by the twenty fathom level below the adit. In doing this, and in driving the adit level southward, it is expected the monthly costs will not be increased beyond what they have hitherto been, the carrying out of such level, as well as the twenty fathom level, and sinking the shaft in the Mine-park, having been in operation for several months past, while the costs of the half year have decreased by about 40*l.* in what they were in the preceding half-year, and the value of the ore sold has been about 20*l.* more.

The directors might have raised and sold larger quantities of ore for the past twelve months than they have, but they believe that the best interests of the shareholders have been followed by their not taking away more ore monthly than it has been considered by the mine agents they have been discovering, and the mine would fairly bear, consequently the mine has not been exhausted more than it was twelve months since, comparing it with the ore discovered then and now, but, should any new discovery be made, the directors would soon be enabled to increase the monthly sales of ore, which would give an increase of profit.

In reference to the special matter which is now to be submitted to the meeting, it will be recollected that previously to the formation of this company one moiety of the ore discovered in the set had been granted to the Tretoil Company, and that in consequence of the remaining moiety having been granted to other parties it was deemed necessary to separate the whole, and form a new company, and the present was accordingly established. One moiety of the same shares issued being divided amongst the proprietors of the Tretoil Company, according to their respective interest therein. At this period there were some shares of the latter company which had become forfeitable for non-payment of calls long previously made thereon, and those shares were duly declared to be absolutely forfeited, and the right to all profits and advantages to arise from such forfeited shares thereby became vested in the remaining proprietors, on whose behalf the directors of the Tretoil Company now claim to have the shares in this company delivered to them on payment of the call of 5*l.* per share thereon. The forfeited shares amount to about 140, and the directors of this company recommend that seventy Tretoil shares be now delivered to the directors of that company, upon payment of the said 5*l.* per share. The only other matters which they have to bring before the meeting are the election of two directors, one in the place of Mr. John Simpson, deceased, and the other in place of Mr. J. Reeves, who goes out of office by rotation, but who, being re-eligible, now offers himself for re-election; and likewise the usual annual election of two auditors; the present auditors are also re-eligible, and are willing again to undertake the duty of that office.

#### Dr. Balance-sheet to end of June, 1841.

To sale of ore and carrying from July, 1, 1840, to end of June, 1841.	£18,429 18 9
Cash on account of call.	47 10 0
<b>By balance</b>	<b>£18,477 8 9</b>
Working costs from June 1, 1840, to Dec. 31, 1841.	£1500 19 8
Do do from Jan. 1, 1841, to June 30, 1841.	5232 14 0
<b>£16,732 13 8</b>	
Deduct law expenses, &c., in cost-shed.	31 10 8 = 16,763 3 0
London expenses.	219 0 4
<b>Balance</b>	<b>£1,699 11 96</b>

#### Dr. Balance-sheet from July 6th to end of August, inclusive.

Balance brought down	£1,699 11 96
July 25, sale of ore and carriage	1,144 12 0
August 2, ditto (estimated)	1,278 0 1
<b>By dividends</b>	<b>£4,300 13 4</b>
<b>Balance</b>	<b>£7,222 13 4</b>
<b>ASSETS.</b>	<b>£4,300 13 4</b>
Value of ore and balance on the surface	54 0 0
The above balance	1,000 0 0
Machinery, &c.	2,000 12 4
	1,266 0 0
<b>£4,300 13 4</b>	

[The mining captain's report was then read, for which see the "Mining Correspondence."

It was moved by Mr. WHITE, seconded by Mr. ALLAN, and carried unanimously—"That the report and statement of accounts be received, adopted, printed, and circulated amongst the proprietors."—It moved by Dr. LAMB, seconded, and carried unanimously—"That Mr. James Reeves be re-elected a director of the company."—It was moved by Mr. WHITE, seconded, and carried unanimously—"That Mr. Charles Chippendale be elected a director of the company."—It was moved, seconded, and carried unanimously—"That Messrs. J. E. C. Stabbing and George Mills be re-elected auditors for the ensuing year."—It was moved, seconded, and carried unanimously—"That the application of the Tretoil directors for seventy Tretoil shares, in respect of 140 Tretoil shares forfeited, be granted in payment of the 5*l.* call on each share."—It was moved, seconded, and carried unanimously—"That the thanks of the meeting were due to the chairman for his able management of the company's affairs."

The thanks of the meeting were unanimously passed to the directors and officers of the company for their zeal and attention to the interests of the proprietors, and the meeting separated.

##### BOLIVAR MINING ASSOCIATION.

An extraordinary general meeting of the proprietors of shares in the above mine was held at the offices of the company, Warfield-court, on Tuesday, the 31st ult.

ALEXANDER McDONALD, Esq., in the chair.

The advertisement convening the meeting having been read, the SECRETARY, at the request of the chairman, read the trustees' report, which stated that the failure of the blast-furnace, and partial failure of the reverberatory-furnace sent out, had determined the trustees to have some trial made in England with the Bolivar ore, and the same fuel as they had at the mine.

The CHAIRMAN stated, that the trials would be soon over, and the only course would be to adjourn the meeting until that day month.

Mr. WESTCOTT wished to know if there was to be no statement of accounts submitted to the meeting? What were the liabilities?—The CHAIRMAN replied, that the trustees had accepted bills to the amount of the value of the property, which was on its way out, they had received notice that 150 tons of ore had been shipped in one vessel, and 541 tons altogether had left the mine.—In answer to another question from the same proprietor, as to how they got at the value of the ore? the CHAIRMAN replied, that the average per centage was taken at the lowest rate. The assets of the company were at present equal to meet the liabilities.—Mr. BARRELL stated, that it was desirable to incur no liabilities beyond the actual amount of assets.

Mr. PENNY inquired if the present directors were the same parties who had the management of the company some years back?—The CHAIRMAN explained, that the present trustees were chosen by the proprietors, about two years back.—Mr. PENNY stated, that, under the old management, everything went on badly; he had thought that, if they had the same directors, they might have the same result as formerly.—Mr. THOMSON said, that the fault of the last direction lay in its lavish expenditures. The trustees had gone so far as they thought right in making these expenditures; if they were successful, he saw no reason why, with the same fuel, they should not be able to do as well over the water as in England; the thing would soon be decided, and the result would be made known to the



\* A June brief—141-720 stands.



time; and he would also say, that he had been treated fairly and honourably by the company. Mr. Mahony concluded by stating, that he agreed with the suggestion thrown out by the chairman relative to the establishment of societies for the relief of those labourers who might be injured during the progress of the work.

Mr. BRODIE fully agreed in all that had fallen from the chairman in reference to the labourers on the railroad, and he had great pleasure in proposing for their adoption a resolution upon the subject, which had been drawn up by the chairman, and which recommended the establishment of a friendly society, from which each labourer who contributed a certain sum to its funds would get a provision in case of sickness; and, in a case of death, that a provision should be made for his family.—Mr. WRIGHT seconded the resolution, which was carried unanimously.

Votes of thanks were then passed to the auditors, to the board of directors, and Mr. Eckersley (the managing director) and to Mr. McNeill (the engineer). The marked and special thanks of the company were given to Mr. Hamilton, for the zeal he evinced since the commencement of the undertaking in promoting its interests, after which the meeting separated.

#### TAFF-VALE RAILWAY.

The half-yearly general meeting of the proprietors of this company was held at the Angel Inn, Cardiff, on Tuesday, the 24th ult.

WALTER COFFIN, Esq., in the chair.

The advertisement calling the meeting having been read, the report of the directors was read, and received with much approbation.

Mr. EDY then moved, and Mr. Charles Vachell seconded—"That Sunday travelling be discontinued."—Mr. EDY said, he preferred receiving less per centage for his money rather than benefit by a trade which he deprecated.

The CHAIRMAN, in putting the motion, stated that the subject had been considered by the directors upon the representation of several excellent and highly-respected individuals, and the board had come to the decision to continue the trains which did not run during the hours of divine service.

A short conversation took place, when the matter dropped.

Mr. R. HOLLY moved—"That the report of the directors be received, adopted, and printed."—Mr. D. W. JAMES, in seconding the motion, said, he felt very great satisfaction in hearing the contents of the report. He was taken quite by surprise; he was satisfied that had any person at the meeting of the proprietors in February last, or at any other of their meetings, stated that they would be in receipt of 10,000l. per annum from passengers only, he would have been thought fit only for Utopia. It was now quite evident that the whole traffic of the country, without the iron trade, was not confined to 10,000l. per annum, as a great freighter had stated to a friend of his.

Mr. VAUGHAN begged to know what steps the directors proposed taking with regard to the Dowlais and Ely branches?—The CHAIRMAN stated, that the question was most easily answered. There was a fable of a certain French king, passing through a town in his dominions, who was surprised that the inhabitants did not ring the bells of the churches. The inhabitants stated, that they had fifty-nine good reasons; the first was, they had no ropes. "Hold," said the king, "your first reason is sufficient." So with the board, there were many reasons why these branches could not be made at present—the first was, they had not the means. Up to June last, the liabilities of the company were 50,000l., and yet so desirable was the completion of the Llaneloch branch, that, notwithstanding this debt, they had determined to spend 15,000l. more, to receive 15,000l. per annum, derivable by the opening of that branch. The measure had shook the hearts of some of the stoutest of the directors, yet they were determined to open that branch with every possible expedition. Under the present aspect of affairs, it was impossible to think of the Ely or Dowlais branches; but no doubt the time was not far distant when there would be plenty of money to form either of those branches, which ever the proprietors deemed most desirable. One thing was quite clear, that when their present capital paid 5l. per cent., so difficultly whatever would exist in obtaining the requisite funds; and when this time arrived, it would be the earnest endeavor of the directors to keep the interest of the shareholders broadly before them, and it was better now to leave the question of these branches for the present.—Mr. VAUGHAN expressed his approbation of the view which the chairman took of the subject.

Upon the CHAIRMAN calling the attention of the meeting to the bye-laws, it was moved, seconded, and carried—"That the bye-laws proposed be adopted."

The CHAIRMAN then stated, that three directors were to go out of office, but were eligible to be re-elected.—It was moved, seconded, and carried—"That Sir John Guest, Bart., Christopher James, Esq., and R. H. Webb, Esq., be re-elected directors."—The thanks of the meeting were then voted to the chairman and directors for their zeal and attention to the interests of the company, which being acknowledged by the CHAIRMAN, the meeting separated, well satisfied with the prospects of their affairs.

#### BIRMINGHAM AND DERBY RAILWAY.

The general meeting of the proprietors in this company was held on Thursday, the 26th ult., at the Waterloo Rooms, Birmingham, having been adjourned from the 10th ult. for the purpose of receiving the report of a committee appointed to investigate the accounts and the financial condition of the company. From the report, which was read and adopted, it appeared that a considerable discrepancy had existed between the amount of traffic as published weekly, and the aggregate amount ascertained at the close of the half year; the latter having fallen short of the former by no less than 1289l. 18s. 3d. This error the report stated to have arisen from errors in keeping the accounts of the merchandise and mineral traffic, and to have shown considerable negligence in the principal servant of the company. With respect to the general financial condition of the company, the report stated, that, in addition to the sum of 8,000,000l. raised by shares, and 255,666l. by debentures, a further sum of 80,000l. would be required to complete the line. With regard to the revenue, it appeared that the gross proceeds of the traffic for the past year had been 56,356l., which, after paying the charges of working the line and the interest upon the borrowed money, left a balance of profit for the year of 6361l. 2s. 6d.—equal to about 13s. 4d. on each share of 100l. The committee, however, expressed a confident expectation, that the traffic will ultimately be greatly increased; and they presented a series of calculations to show, that a gross annual income of 113,438l. might be fairly expected, which, if realized, will probably pay about 4 per cent. to the shareholders. The meeting resolved that no dividend should be made, and that the surplus of 6361l. 2s. 6d. should be carried to the credit of the revenue account.

#### ON SOME INSTANCES OF RESTRAINED CHEMICAL ACTION

BY E. A. FARNELL.

(From the proceedings of the British Association.)

The object of this paper is to add to the list of circumstances which modify or prevent the action of chemical affinity, in a force exerted by the presence of water in the sphere of decomposition, producing a force of considerable power, and one whose action has not been hitherto recognised. Its existence has been traced by observing the want of action of certain gases, and especially sulphuretted hydrogen, when in a perfectly dry state, on substances on which they exert a vigorous action in the presence of water. Thus, papers impregnated with salts of lead, mercury, and copper, were preserved from the action of sulphuretted hydrogen, if removed absolutely dry. The effect of water in permitting action between these same bodies, does not wholly depend on diminution of the force of cohesion, by dissolving either the gas or the salt, as is proved by several circumstances.—1st, this want of action is perceived only on particular salts; 2d, to restore the action, water may be present in a state of combination with the salt, though it can then exert no solvent power; 3d, on moistening different dry salts with absolute alcohol, which dissolves six times its volume of sulphuretted hydrogen, and exposing to the gas, still no action ensued. On considering the nature of the salts on which the action of sulphuretted hydrogen is restrained it appears that the function of water in permitting action is to combine with the acid, which should be rendered free by sulphuretted hydrogen, immediately on its liberation.

One equivalent of water, is not, in every case, sufficient to satisfy the acid, for all sulphurous salts of the oxides of mercury, copper, or lead, can produce one equivalent of water with sulphuretted hydrogen. The action of water may, in some measure, be assimilated to that between sulphuric acid of different degrees of strength and metallic iron or zinc. These metals, as is well known, undergo no change in oil of vitriol, though in this case, as well as when dry sulphate of lead is exposed to dry sulphuretted hydrogen, it would be said all is necessary to produce decomposition. But in both cases water must be added for action to ensue; in the one it unites with the sulphate of zinc about to be formed, and in the other with the sulphuric acid. But there are some salts of these metals which are unacted on by sulphuretted hydrogen when dry, whose acid or hydrous of its salt-radical possesses but little affinity for water, and to which, consequently, this explanation will not apply. In considering the cause of the want of action here, it must be remembered that sulphur is in reality a weak radical; that if the salt be soluble, a force is called into action when its solution is acted on by sulphuretted hydrogen, which possesses great power over the results of chemical action—viz., insolubility of the sulphuric acid and water being present with which the acid can unite when free, it does not follow that decomposition must occur in one case because it will in another under the influence of other forces. The author concludes by suggesting an explanation of the singular action between potash and carbonate of lime, in presence of a small quantity of water, observed by Prof. Liebig—carbonate of potash and caustic lime being formed. Both caustic potash and carbonate of potash have a strong affinity for water, but of the two, caustic potash the greater; here is sufficient water to supply the demands of the carbonate, but not of caustic potash; the result is, carbonate of potash and caustic lime are formed.

#### ORIGINAL CORRESPONDENCE.

##### ADCOCK'S SPRAY PUMP.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—If your correspondent, who has selected for himself that felicitous sobriquet, "One North of the Tweed," is really desirous of the information he seemingly solicits, he will address me as a man of business, privately, and under his proper signature, and furnish me with clearer and more precise particulars to work upon. I repeat, "clearer and more precise particulars," for who, Mr. Editor, can conceive the necessity of employing a 30-inch cylinder (whether of high or low-pressure) to work a set of 9-inch pumps, from a depth of ninety-two yards, and at the rate of 4½ strokes per minute? Perhaps your correspondent is sinking, and the power employed is intended for a quicker speed, and much greater depth.

The information he seeks being estimates for a stated pit, although the details of that pit are not sufficiently given, must be considered as of a local nature. It cannot, therefore, be regarded otherwise by your readers in general, or myself, than as appertaining less to public than to private life.

If your correspondent will write to me, privately, he shall be furnished with every necessary information. I am, Sir, your's, &c.,  
Wigan, August 30. HENRY ADCOCK, C.E.

##### ON THE CONSUMPTION OF FUEL.

TO C. W. WILLIAMS, ESQ.

SIR,—Allow me to reply to your two letters (see Journal, of August 7th and 14th), that, although you undertake in the first to boil off a given weight of water with a given weight of fuel, in a shorter time than can be done with any of the methods of firing ordinarily in use; and, in the second, though you bring forward a letter from the manager of a Liverpool water company in proof of your assertion, yet I respectfully reply I am not at all satisfied. In a question of such consequence it is absolutely requisite that you bring forward the facts in detail; nay, more, that there be competent witnesses to prove the truth of such facts. I would, therefore, recommend that you try the experiment fairly and faithfully. Take a common boiler, with a given area of fire grate (your own model boiler, which I have seen, will do very well), and then try if you can "burn as much fire in the same time as you can with light firing, and without the aid of your air dispensers." You can also test the evaporative power in the same way; the whole question, I assure you, turns upon this point—viz., rapid combustion; or, in other words, it is altogether a question of time. I don't deny but where fuel is perfectly consumed there is more heat produced than where it is consumed imperfectly; but I submit it is not quite so self-evident as you seem to consider, that, to burn fuel perfectly requires no more time than to burn it imperfectly; in fact, I know to the contrary in an ordinary furnace. I will give you my reason for troubling you with my original query, and the one contained in this letter: I observed in your boiler that you carefully avoided letting too much air into your furnace, lest it might interfere too much with your distillatory process. Now, where you do that, it strikes me you cannot burn away the coal so rapidly; why else is it that you make use of such means as are used in locomotives to increase the draught, and in consequence the rapidity of combustion? Depend upon it, where there is a rapid draught, there is most smoke; and you will find it somewhat difficult, even with your apparatus, to get both rapid combustion, and, at the same time, consume the gases. I mean, where raw coal is used, your plan, I repeat, will answer, as does slow combustion where there is plenty of boiler room; but, where you have to burn a ton to a ton and a half of coal per horse per week, I repeat I think you will find it will try your plan hard. A ton is below the average of what is burned in this town. From this fact some of the coal economists may form some judgment of the work performed by our engines (slack is used); now, if your plan won't burn the fuel so rapidly, what will be the consequence? You will from this see the importance of proving that you can do what you say. Theory may lead you to suppose that you can do so; but, unless practice prove it, your success cannot be anything but limited. Thanking you for your efforts in this cause, I remain, Sir, your's, &c.,  
Wigan, August 19. H. BULLOCK.

##### ON THE EXPLOSION OF STEAM-BOILERS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—The columns of the Mining Journal present a continual succession of subjects of paramount importance to the interests which it may be said to represent, and whose cause it advocates. The bursting of steam-engine boilers has latterly occupied considerable space there. It might by some be considered presumptuous in an obscure individual, who is neither entitled to the capitals "C.E." after his name nor any others, nor a Professor of chemistry or electricity, to offer opinions on such a subject; but I consider it the duty of every one to contribute his ideas to the general fund, when an opportunity is afforded, and how invaluable a public Journal becomes, conducted upon the liberal principles of the Mining Journal, whose motto appears to be "No favour," where even an operative mechanic has an opportunity of recording an original idea, however crude, as it may there meet the eye of the scientific and experienced, to be improved upon and turned to good account, contributing to the advancement of science and the public benefit.

There can be no doubt but that the bursting of boilers is occasioned by more causes than one. In some instances the over pressure of the steam simply has been the cause. I recollect one instance of a steam-engine boiler, working the machinery of the forge and mill in extensive iron-works, where it was the custom to give the signal to the engineer to stop the engine by striking upon some sonorous part of the iron work; the signal being given one day more loudly and rapidly than usual, the engineer, thinking some accident had happened, at once stopped the engine, without the usual precaution of opening the fire-door, all the force sufficient to keep in motion powerful machinery was thus suddenly thrown back upon the boiler, in addition to the progressive increase of force to supply such power, more than any safety valve is sufficient to counteract—and the end of the boiler (a long Cornish tube boiler) was driven out. Here the circumstances were quite sufficient to account for the bursting of the boiler. To guard against such, a little common prudence is all that is required. I have observed that it has been recommended by some correspondent of the Mining Journal to substitute a fan-blower for the draft of the chimney. Were this adopted it would prove a complete safeguard, the fan being worked by the engine; when it stopped so would the exciting cause, the primus mobile, if I may be allowed to use the term. The greatest number of explosions of steam-engine boilers, working machinery in manufacturing establishments, which I recollect, has occurred after the stoppage for some time of the engine, such as the period for the workmen's meals, or similar occasions.

Some observations of Mr. Parkes seem to corroborate this. In many of these explosions there have been circumstances not easily accounted for. I take the liberty of submitting a string of crude ideas, without attempting a systematic arrangement.

It has been proved that, under certain circumstances, a boiler highly charged with steam exhibits electrical excitement. I know little of electricity, but I cannot direct my mind of the idea that there is some connection between it and the decomposition of water, the reunion of its elements, or their reunion prevented by some opposing cause. In hot sultry summer weather, such as usually precedes a thunderstorm, when the earth is parched, the ponds and rivulets dried up, the water which is at other times upon the land must be in the atmosphere, yet it indicates no moisture, until at length the air becomes loaded with dark vapours, thunder and lightning follow, and rain comes down in torrents, when the atmosphere undergoes a complete change. It seems rational to suppose that, previous to the thunderstorm, the vapour of water in the atmosphere had, by being kept for a length of time in a highly rarefied state, become separated into its constituent gases, their chemical union having been overthrown, but, by some excitement, perhaps electrical, they reunited with explosive violence, producing thunder and lightning, the formation of vapour, and its rapid condensation into water. May not something similar occur in a steam-boiler? the steam being kept confined for a time in a rarefied state, being resolved into its constituent gases, and these, upon some sudden excitement, reuniting with explosive violence. Should such be the case, in order to guard against it, I would suggest that, whenever an engine is to be stopped for such a space of time as half an hour, the steam in the boiler should be allowed to escape, so also that which is generated during the time of stopping until within a few minutes of the time of starting work again. This is easily done, and in talk of wasting the steam would be more fully.

The bursting of a boiler may certainly be caused by incrustation upon it, part of the plates becoming red-hot, and the incrustation breaking off

There are various contrivances for preventing or removing incrustations. But the most sure way of guarding against it is to take pains in keeping the boilers well cleaned out. Where an engine is required to be constantly at work, such as pumping mines, there should always be a spare boiler. In manufacturing establishments where work is seldom done on Sundays, the proprietor or manager should see that the boiler is cleared out every Sunday morning. Let the engineer have a fair allowance for doing it.—Fearing I have already intruded too much upon your valuable space, I remain, Sir, your's, &c.,  
August 31. A CONSTANT READER.

#### THE BRITISH IRON COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In your report of the meeting of the British Iron Company, held on the 26th ult., I am made to say "that I would stake my professional reputation that other business might be transacted at a special general meeting than that for which it is called." What I said was, "that a special meeting, called specially to dissolve a company, could appoint a committee, although not mentioned in the requisition," and I proposed an amendment to that effect. Mr. Martineau, the solicitor, objected to the amendment being put, as it would be travelling out of the requisition, which was simply "to dissolve the company." Upon this I rose, and, after remarking upon the absurdity of the objection, I said "I would stake my professional character that a special meeting of shareholders, called to dissolve a company, could appoint a committee for that purpose, either previous or subsequent to the resolution dissolving the company," for how were the shareholders to dissolve a company but by appointing a committee to carry their resolutions into effect. After some discussion it was agreed to embody my amendment in the resolution for dissolving the company, and it was put to the meeting—twenty-five hands were held up in favour, and fifty-three against it, but, with the number of proxies tendered, there was a clear majority in favour of the resolution. Notwithstanding this, the chairman refused to take the proxies—declared the resolution lost—and the meeting dissolved.

Now, without making any comment upon the attempt to ride roughshod over the shareholders, I can only say that, should it turn out that the calls, as alleged, are illegal, the vote tendered by proxy will be strictly in accordance with the clause of the Deed of Settlement, and the resolution, declaring the company to be dissolved, will be virtually carried, and the dissolution of the company, in the eye of the law, will then be from the time of the last meeting.

Perhaps I may be further allowed to trespass on your Journal to remark, that the examination of the accounts printed in the report of the directors, and the review of that report in my printed letters to the directors, prove the necessity for an immediate inquiry into all the affairs of the company. The directors, instead of promoting an inquiry satisfactorily to the body of shareholders, say, "pay up your calls, enable us to settle all claims and liabilities, and then we will wind up the concern." The shareholders, on the other hand, say, "we will not pay any more money until we have a satisfactory explanation of the way in which the money already subscribed has been expended." Can anything be more fair or reasonable? They say, further, "we are not desirous to avoid liabilities, justly and properly incurred."—Why, then, I ask, do the directors refuse this inquiry? Is it not enough to create mistrust? The directors admit the losses to be enormous, and that it is desirable to wind up the affairs of the company.—But when?—When the shareholders have added another half million to the two millions already thrown away. Now, I propose a middle course—

1. Let there be a fair committee of inquiry into the past receipts, expenditure, and the present value of the various properties.
2. Stop all litigation by final arrangement with Mr. Atwood.
3. Wind up the affairs of the company—sell, let, or dispose of all the unprofitable assets, some of which might, perhaps, answer in a private individual's hands.
4. Divide what remains. Let those shareholders who wish leave the company, and let those who remain reorganise it on a new basis, and as a new property that can be advantageously obtained.
5. Such of the shareholders as remain might, by the creation of the fresh shares in the new company, on advancing terms to them, be enabled soon to pay something as a bonus to those who were desirous of retiring.

Unless some course like this be adopted, I see nothing but endless litigation—the shareholders will not pay up their calls, and the directors cannot force them, as equity will interpose. Besides, in the event of further discussion, it is not at all clear to me that, if certain statements in print can be borne out, notwithstanding the final nature of the appeal to the House of Lords, a petition might not be so framed, upon good Parliamentary grounds, as to obtain a committee of inquiry, and the rehearing of this most extraordinary case. Let the directors avoid this, by coming forward and openly meeting the shareholders—let them bury the past in oblivion, by uniting together for the common good of all. As far as I am concerned they shall have my assistance with pleasure, as I believe that the directors have been quite as much deceived as the shareholders, and, as I have elsewhere observed, I cannot bring myself to believe that gentlemen of their standing and respectability would wish to be made the means of further adding to the heavy losses of so confiding a body of shareholders. I am, Sir, your's, &c.,  
W. R. BARNISH MOTTS.

[We received the letter of Mr. Motte at too late an hour to be able to offer any lengthened observations; we have, however, perused it carefully, and the result of our opinion will be found embodied in the remarks which appear in another part of the Journal, treating on the affairs of the British Iron Company.]

#### FROM THE LONDON GAZETTE.

Tuesday, August 31.

##### INSOLVENT.

Aug. 31.—W. and J. Walker, Mr. John's sign, Clerkenwell, and Manchester, manufacturers of apparatus for heating buildings.

##### BANKRUPTCY ENGLAND.

John Hetherington, King's Arms-yard, wholesale tea merchant, from August 31 to November 30.

##### BANKRUPTCY.

J. Williamson, Nicholas-lane, Lombard street, merchant. (Gibson and Co. Frederick's place, Old Jewry. (Church-court, Old Jewry. J. Scott, Brick-bill-lane, Upper Thames street, merchant. (Crowley and Company, H. Bentall, Cecil street, Strand, coal merchant. (Apsley, Tottenham-street. C. Bantall, Oxford-street, Jeweller. (Newman and Co., Watford-place, Drury-lane. A. Dyson, Bedford, plates on steel. (Wilson, Southwark-street, Birmingham. E. Jeffery, Exeter, builder. (Mowley and Co., Bedford street, Covent-garden. A. A. Newell, Leeds, staff merchant. (Balfour and Co., Chancery-lane. T. F. and J. E. Baines, Manchester, drapery. (Taylor and Co., Bedford-square.

##### DIVIDENDS.

Sept. 25, H. W. Perrybough, Reading, Berkshire, bookseller.—W. Cross, Mount-nelson, Essex, grocer.—J. W. Brock, a New-street-square, Fetter-lane, soap manufacturer.—W. B. Perry, Chrysolite, Birmingham.—J. B. Whitely, Hatfield, York-shire, wooden-stick manufacturer.—J. B. Pearson, Nottingham, common lawer.—G. Meier, Manchester, Birmingham, chemist.—J. T. Foster, Ipswich, wine merchant.—J. T. Sanderson, Birmingham, chemist.—J. T. A. Sanders, Ryde, Isle of Wight, builder.

CERTIFICATES to be granted, unless cause be shown to the contrary, on or before Sept. 31.

1. H. B. Mott, Pall-mall, pianoforte maker and Dean-street, Soho, distiller.—J. Lee, Jun., Chester, tea dealer.—J. Dyson, Leeds, music seller.—T. Barnard, Birmmham, drapery merchant.—J. Fowler, Netley Compton, drapery merchant, and cloth manufacturer.—J. Unwin, Tunstall, Staffordshire, joiner.—D. H. Stoddart, Liverpool, copper merchant.

##### Friday, September 3.

##### BANKRUPTCY.

J. Reynolds, jun., and J. Reynolds, jun., Druggate Bank, Upper Thames-street, drapery. (Hammack, Nine-lane. J. Jewett, North-side, Bethnal-green, wine cooper. (Van Suiden and Co., King's Highway, Huddersfield, leather. (King, Verulam buildings, Gray's Inn-square. J. Taylor, Ipswich, grocer. (Ladbroke and Owen, Chancery-lane. S. L. Gwynne and F. Vance, Liverpool, merchants. (Addington & Co., Bedford-square. T. Worthington, Bury, Lancashire, leather. (Horne and Co., New-lane. R. Davies, Plymouth, Manchester, steam coal merchant. (Addington and Co., Bedford-square.

##### DIVIDENDS.

Sept. 27, J. Carter, Ebbw, Yorkshire, iron miller.—Oct. 1, C. B. Guy, Huddersfield, grocer.—Sept. 28, G. P. Blakey, Huddersfield, Yorkshire, draper.—J. Smith, Huddersfield, draper.—J. W. Gough, Wigan, Manchester, grocer.—J. W. H. Sanderson, Manchester, coach builder.—Oct. 1, J. B. Green, Bristol, merchant.—Sept. 28, E. Jones, Liverpool, soap manufacturer.—J. Henderson, Thornhill's road, Leeds.—J. Greville, Fish-street Hill, leather seller.—J. T. Lewis, London, hotel keeper.—J. T. Greville, Liverpool, wine merchant.

CERTIFICATES to be granted, unless cause be shown to the contrary, on or before Sept. 28.

W. Unwin, Tottenham-road, Leyton, old hardware.—H. Ward, Bedford, leather.—C. Brown, Oxford-street, china and glass dealer.—W. Hadden, Manchester, cotton wool merchant.—J. Taylor, Leamford, Leeds, glass dealer.—H. W. Bate, Colchester, hardware-dealer, householder.—J. B. Barrow, Chicago-alley, Germain, glass-blower.



